

Stars! Player's Guide - Contents

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## Introduction and Player Support

**Order Now!**

For information about what you'll find in the retail version, read [Frequently Asked Questions](#).

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## Setup and Hosting

**Order Now!**

Demo version play is limited to **80 turns**. For information about what you'll find in the retail version, read [Frequently Asked Questions](#).

Stars! may be played as either a single or multi-player game. Single players are matched against one or more AIs (computer players) while multi-player games pit 2 or more human players against each other and any combination of AIs. Up to 16 human players and AIs can play in the same game.

In a single player game, the computer acts as host, generating a new year for the universe after each turn is submitted. In multi-player games, a human player or non-player acts as host, collecting orders from all human players, generating the new year and then sending that information back to the players.

Multi-player games may be played by "hot seating" on one computer, over a network, or, if the host is at a remote site, by transferring files using a modem, FTP or E-mail.

#### Single Player Setup

[Playing the Tutorial](#)

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## Playing Stars!

**Order Now!**

For information about what you'll find in the retail version, read [Frequently Asked Questions](#).

How to build your empire, win your wars, and take out the trash.



## Popup Help

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When the normal cursor changes into a help cursor, point the arrow at an item and left-click to see popup help and technical details. You can also left-click on blue diamonds to display popup help on the commands accessed through the diamonds (cursor stays normal).

## Major Elements of Play

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<a href="#">Planets</a>	<a href="#">Transporting Freight</a>
<a href="#">Production</a>	<a href="#">Combat</a>
<a href="#">Research</a>	<a href="#">Patrolling</a>
<a href="#">Ship/Starbase Design</a>	<a href="#">Scanning and Cloaking</a>
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<a href="#">Colonization</a>	<a href="#">Diplomacy and Trade</a>
<a href="#">Mining</a>	

## The Stars! Screen

**Order Now!**

For information about what you'll find in the retail version, read [Frequently Asked Questions](#).

Understanding the Stars! screen layout and controls. The screen is divided into four panes:

### Command pane

This is where you give detailed orders to your fleets and planets. Collapsible tiles display data and controls for the planet or fleet under your command.

[Commanding a Planet](#)

[Commanding a Fleet](#)

### Messages pane

This is where you receive yearly reports from far-flung fleets and planets and messages from other players. Build alliances or deceive enemies with your crafty replies.

### Scanner pane

This is your view of the universe. Use the scanner toolbar to select filters and overlays. Manipulate fleet routes and track opponents who ignore your no trespassing signs.

### Selection Summary pane

This area shows details about the object selected in the Scanner pane.

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## Read about manipulating the Stars! screen:

[Changing the Basic Layout](#)

[Shrinking and Growing Panes](#)

[Moving and Collapsing Tiles](#)

## Stars! dialogs

**Order Now!**

For information about what you'll find in the retail version, read [Frequently Asked Questions](#).

You can find help for all the Stars! dialogs from each dialog from here:

[Advanced New Game](#)

[New Game](#)

[Battle Plans](#)

[Player Relations](#)

[Battle VCR](#)

[Production](#)

[Cargo Transfer](#)

[Rename Fleet](#)

[Change Password](#)

[Research](#)

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[Score](#)

[Custom Zip Orders](#)

[Ship & Starbase Designer](#)

[Customize Production Templates](#)

[Ship Transfer](#)

[Find Planet or Fleet](#)

[View Game Parameters](#)

[Merge Fleets](#)

[View Race](#)

## How to...

**Order Now!**

For information about what you'll find in the retail version, read [Frequently Asked Questions](#).

### Miscellaneous

[Send Messages to Other Players](#)

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[Build a Mass Driver](#)

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[Shuttle Colonists Using Freighters](#)

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[Transfer Fuel and Cargo to other Fleets](#)

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[Create a Robot Mining Fleet](#)

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[Change a Battle Plan](#)

[Lay Minefields](#)

[Sweep Minefields](#)

[Initiate Ground Combat](#)

[Review a Space Battle](#)

[Collect Salvage from Space Battles](#)

[View an Enemy Fleet Summary](#)

[View Enemy Ship Designs](#)

### **Reports and Maps**

[Display Reports](#)

[Print a Map of the Universe](#)

## **The Guts**

**Order Now!**

For information about what you'll find in the retail version, read [Frequently Asked Questions](#).

Here's rule-based information for advanced players.

[Data Tables](#)

[The Guts of Combat](#)

[The Guts of Cloaking](#)

[The Guts of Minefields](#)

[The Guts of Mass Drivers](#)

[Alternate Reality Races](#)

[Files Used in Stars!](#)

# Welcome to Stars!

[Introduction and Support Topics](#)

## **It's a Relatively Small Universe, After All**

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Somewhere out on the edge of the Universe, two great races (the Sznip, a race of crustaceans, and the Fermis, a race of nuclear plasmatooids) have destroyed themselves and the chance for all remaining sentient races to evolve and expand into (nearly) infinite space. Once upon a time there was a Theory that said the Universe was made up of interconnected bubbles of space/time. The Sznip and the Fermi War proved it. The detonation that destroyed both these super races also caused these bubbles of real space to pop (actually a simultaneous replacement of real space with null). All the bubbles but one. This bubble of space/time, your bubble, is all that remains. And it's small (too small) and full (too full) of sentient species, each on the verge of colonizing other planets and traveling between the stars. Each race hungry to control the little bit that's left.

There's bound to be trouble.

## **What You're Doing Here**

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Fortunately, the element found in the terrible weapons of the Sznips and Fermis does not exist in the Universal Remnant. So there's a limit to the trouble you and your opponents can cause. During your first year, you'll be ready to build your first simple space ships. Eventually you'll build interstellar cruisers and planet bombers, freighters the size of small moons, and weapons that will make your opponents tremble (or shrug, depending on their confidence level). You'll colonize world after world as quickly as only your race can. You may get lucky, and find artifacts left by those ancient races that catalyze your research efforts, or encounter transdimensional beings offering you knowledge that only they possess, and at low, low prices. By the time the space dust settles, 100, 200, perhaps 500 or more years will have passed, and either you or one of your undeserving opponents will be calling the shots. Or, shot up, war-scarred, and with too few resources to continue, you'll call a halt, shake hands and all settle down for a foot stomping game of Fizbin.

It's the 2400th year of the Planetary Era. Your world is resource rich and bustling with technological development. Your political leaders are giddy and, with much fanfare, have just declared this as the first year of the Galactic Era. Your people are looking for a real leader.

## **You are the Master Strategist**


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Use the Stars! control panels to command your capitol worlds and fleets, to seek out strange new worlds and new civilizations, to boldly help your neighbors understand their role in the doctrine of Manifest Destiny.

Stars! may seem complicated at first glance. Lots of tiles and windows, lots of text, lots of colors. These things require a little explaining. Only a very little.

But not here. You won't need to pay more than cursory attention to most of the information on the screen, most of the time. It's there when you need it. You can even temporarily collapse some pieces if you find them distracting.

To orient yourself, before you go nose to beak with the other spacially challenged races, PLAY THE TUTORIAL GAME. Just click on **New Game** in the opening screen, then click on **Tutorial** in the New Game dialog.

To get help during play, LEFT-CLICK the mouse when you see this cursor: . Also consider clicking on Help buttons in the dialogs and choosing the Help commands in the main menu.

Get going. The universe is waiting, along with up to [15 other star-hungry races](#).

## **Multi-player games**

You can challenge your opponents on a single computer or across a local area network, or by transferring turn files using ftp, modems, email, computer bulletin boards, or any other file transfer mechanism you can think of. There's room for up to 16 of you in the Stars! universe, with any mix of human and computer opponents.

## What You Need to Play

### [Introduction and Support Topics](#)

Here's the minimum software and hardware you'll need to play Stars!

**Operating System:** Either Microsoft Windows 3.x, Microsoft Windows NT or Microsoft Windows 95.

**Memory requirement:** 4 Mbytes RAM. 8 Mbytes is preferred.

**Disk space requirement:** 6 Mbytes for program and help files.

**Video display:** Color displays only, 256 colors recommended.

**The higher the resolution the better:** use 1024 x 768 (or higher!) if possible.

800 x 600 is the minimum resolution allowing all tiles to be opened. Still very playable.

640 x 480 is playable but cramped: you'll need to close and open tiles as needed.

## Stars! Web Site

### [Introduction and Support Topics](#)

Be sure to check out the official Stars! Web site, Waypoint Zero, at [www.webmap.com/stars!](http://www.webmap.com/stars!) There, you can view the latest official FAQ and other Stars! information you won't find in this player's guide, connect to sites hosting multi-player games, and send feedback directly to the authors of Stars!, Jeff Johnson and Jeff McBride. If you don't have Web access, you can send feedback to [stars@webmap.com](mailto:stars@webmap.com).

For additional information about Stars! and other fine Empire Interactive games, visit [www.empire.co.uk](http://www.empire.co.uk).



## Submitting Bug Reports

### [Introduction and Support Topics](#)

1. Write a description of the suspected bug in a text file.
2. Zip this text file and all the relevant game files (usually the current and previous turn's files):  
`pkzip -exp gamename.zip gamename.* backup\gamename.* bugnotefile`
3. Send us the zip file in *one* of the following ways:
  - ⇒ FTP the zip file to **beast.webmap.com/pub**. You should also send mail to **stars@webmap.com** notifying us when you upload the file.
  - ⇒ E-mail the zip file to **stars@webmap.com** along with a description of the problem.

We appreciate the time and effort it takes to send these files. It helps us a great deal to have the actual files when trying to determine if a bug exists. Thanks for taking the time to help Stars! maintain its reputation as one of the most stable and bug-free games on the market.

## Playing the Tutorial

### [Game Set Up and Hosting](#)

Stars! contains an intelligent, online tutorial that, in the course of one short (and very real) game, introduces you to a variety of basic strategies and familiarizes you with all the player tools. If you've never played Stars! before, we highly recommend that you play the tutorial first.

- ⇒ Just click on **New Game** in the opening screen, then on **Begin Tutorial** in the New Game dialog. You can quit the tutorial at any time, saving your place to begin again later.
- ⇒ To start the tutorial where you left off, or to start over, click on **New Game** and **Begin Tutorial**, or use the **Help (Tutorial)** menu item.

# Starting a Single Player Game

## [Game Set Up and Hosting Topics](#)

**BIG NOTE: Demo version games are limited to 80 turns. When you buy the retail version, you can use it to continue games started with this demo version.**

We recommend that you [play the tutorial](#) before you strike out on your own.

To start a new single player game, do the following:

1. Click on **New Game** on the opening screen or on **File (New)** from the Stars! main menu.  
In the [New Game dialog](#), select the universe size, difficulty level and race to play. To learn about or modify the attributes of your race, click on **Customize Race**. The [Custom Race wizard](#) appears.  
Click on **Advanced Game** in the New Game dialog to specify the number and type of players, and [the conditions for victory](#).
2. When you're done selecting game settings, **OK** the New Game dialog. You'll be prompted to enter a file name under which to save the game.
3. Enter any name up to eight characters long (don't worry about typing an extension). Stars! creates a set of files containing data for that game and for each human and computer player in the game. You can save the game wherever you wish. By default, game files are saved in the Stars! install directory.  
The game begins, with your home world displayed on the screen and in the [Command pane](#), [Scanner pane](#) and [Selection Summary pane](#). For the first turn, the [Messages pane](#) contains tips that help you get started.
4. Use this turn to investigate your home planet, start basic production and research, and send your scouts out to learn about the nearby worlds.
5. Once you finish the turn, select the **Turn (Generate)** menu item or press the F9 key. Your next turn generates immediately.
6. To quit, select **File (Exit)** or **File (Close)**. If you've made changes since the start of the turn, Stars! prompts you to save. If you don't save, you'll start the same turn over the next time you open the game.  
**IMPORTANT:** The first time you play Stars!, exit using the **File (Exit)** command. This writes the stars.ini file to the Windows directory, saving game options and helping to prevent that pesky serial number dialog from appearing again.
7. When you wish to continue the game where you left off, click on **Continue Game** on the opening screen. You can also click on **Open Game**, selecting *gamename.m1* from the playing directory.

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### Learn more about playing Stars!:

[Your Home World](#)

[Production](#)

[Research](#)

[Setting Fleet Waypoints and Tasks](#)

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### Read more about these general game topics:

[Playing with a Custom Race](#)

[Setting and Viewing Winning Conditions](#)

[Saving Your Game](#)

[Exiting Stars!](#)

[Replaying a Previous Turn](#)

[Files Used in Stars!](#)



## Hosting a Multi-Player Game

### [Game Set Up and Hosting Topics](#)

**BIG NOTE: Demo version games are limited to 80 turns. Because of this, we don't recommend that you host retail version games using the demo version (although Stars! will allow this).**

**When you buy the retail version, you can use it to continue games started with this demo version.**

In a multi-player game, designate one person as the host. This person is in charge of generating turns and generally administering the game. A player can also act as host. The following steps apply whether the game is played on a single machine, over a network, by modem, email or a bulletin board service (BBS).

### **Finding Multi-Player Games on the Internet**

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If you want to join a multi-player game, or start your own, but can't find other players, visit the Stars! Web site, [www.webmap.com/stars!](http://www.webmap.com/stars!). Read the web pages on Player Resources for a list of host sites (growing weekly) and other host and player information.

### **Read more about Hosting a Multi-player Game:**

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[Hosting Hot Seat Games](#)

[Hosting Network Games](#)

[Hosting Modem and Email Games](#)

[What Each Player Needs to Do](#)

[Being Absent from Play](#)

[Creating a Password](#)

[Creating a Universe from the Command Line](#)

## Hosting Hot-Seat (Single Computer) Games

[More Hosting Topics](#)

[Other Game Set Up Topics](#)

**BIG NOTE: Demo version games are limited to 80 turns. When you buy the retail version, you can use it to continue games started with this demo version.**

Before you begin setup, have your players [design their races](#) and give you the race files for loading into the game. Alternately, you can customize a for any player who wishes it.

To set up a multi-player "hot seat" game:

1. Click on **New Game** on the opening screen or on **File (New)** from the Stars! main menu. The New Game dialog appears.
  2. Click on **Advanced Options**, then specify options such as the universe size, difficulty level, relative starting positions, accelerated play for BBS games, number and type of players (real or AI), and the [victory conditions](#). Be sure to load any custom race files provided by the players. Create [player positions for latecomers](#) if you think it's necessary.  
  
The order of players listed in Step 2 of the Advanced New Game dialog becomes part of the turn filename for each player. The turn file for Player 1 will be *gamename.m1*, for Player 2 it will be *gamename.m2*, and so on.
  3. Tell each player their number. They'll need it when they start to play.
  4. You'll be prompted for a game name. Enter any name up to eight characters long (don't worry about typing an extension). Stars! creates a set of files containing data for that game and each player in the game. You can save the game wherever you wish. By default, Stars! will save the game files in the Stars! install directory.
  5. The Stars! Host Mode dialog appears. Create a password, if you want to prevent other players from opening the game file. Click on **Auto Generate** to start the game.
  6. Help the players understand what they need to do using the instructions in [What Each Player Needs to Do](#). If you're playing as well as hosting, you'll probably find it easier to start a second instance of Stars!, playing from one and using the other to handle host duties.
- ⇒ To quit the game, click on **Close** in the Host dialog.
- ⇒ To restart the host, start Stars!, click on **Open Game**, and choose the *gamename.hst* file.

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### Learn about:

[What Each Player Needs to Do](#)

[Setting and Viewing Winning Conditions](#)

[Playing with a Custom Race](#)

[Saving Your Game](#)

[Exiting Stars!](#)

[Replaying a Previous Turn](#)

[Files Used in Stars!](#)

## Hosting Network Games

[More Hosting Topics](#)

[Other Game Set Up Topics](#)

**BIG NOTE: Demo version games are limited to 80 turns. Because of this, we don't recommend that you host retail version games using the demo version (although Stars! will allow this).**

**When you buy the retail version, you can use it to continue games started with this demo version.**

You will need to set up the game in a shared directory (sharepoint) accessible to all players. This sharepoint is the place that will contain all the game files, and where the players will go to open their games. The sharepoint can exist on a local area network, or via a modem connection (if you are using Windows 95 Dial-up Networking capabilities just connect to the server machine or to another Win95 machine with the Plus Pack installed). You can also create network connections using PC-NFS or any other software that allows you to attach directories on the remote server as if they were local.

Before you begin setup, have your players [design their races](#) and give you the race files for loading into the game. Alternately, you can customize a for any player who wishes it.

To set up a network game:

1. Click on **New Game** on the opening screen or on **File (New)** from the Stars! main menu. The New Game dialog appears.
2. Click on **Advanced Options**, then specify options such as the universe size, difficulty level, relative starting positions, accelerated play for BBS games, number and type of players (real or AI), and the [victory conditions](#). Be sure to load any custom race files provided by the players. Create [player positions for latecomers](#) if you think it's necessary.

The order of players listed in Step 2 of the Advanced New Game dialog becomes part of the turn filename for each player. The turn file for Player 1 will be *gamename.m1*, for Player 2 it will be *gamename.m2*, and so on.

3. Tell each player their number. They'll need it when they start to play.
4. You'll be prompted for a game name. Enter any name up to eight characters long (don't worry about typing an extension). Stars! creates a set of files containing data for that game and each player in the game. Save the game in the shared directory.
5. Select **Auto Generate** in the Host dialog. The dialog will minimize, waiting for all players to submit their turns. Stars! automatically submits any turn into the shared directory. Once that's done, Stars! automatically generates a new turn, then returns to wait mode.
6. If you want to force a new turn to be generated, double-click on the Stars! host icon, then select **Generate Now** from the Host dialog. To cause Stars! to auto-generate turns again, select **Auto Generate** again. The dialog will minimize and wait for players as before. Stars! will continue to follow any existing orders for players who didn't submit their turns on time. All messages and data for the missed turns, such as planets discovered or battles fought, will be present when they load the new turn.
7. Help the players understand what they need to do using the instructions in [What Each Player Needs to Do](#). If you're playing as well as hosting, you'll probably find it easier to start a second instance of Stars!, playing from one and using the other to handle host duties.

⇒ To quit the game, click on **Close** in the Host dialog.

⇒ To restart the host, start Stars!, click on **Open Game**, and choose the *gamename.hst* file.

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### Learn about:

[What Each Player Needs to Do](#)

[Setting and Viewing Winning Conditions](#)

[Playing with a Custom Race](#)

[Saving Your Game](#)

[Exiting Stars!](#)

[Replaying a Previous Turn](#)

[Files Used in Stars!](#)



## Hosting Modem and Email Games

[More Hosting Topics](#)

[Other Game Set Up Topics](#)

**BIG NOTE: Demo version games are limited to 80 turns. Because of this, we don't recommend that you host retail version games using the demo version (although Stars! will allow this).**

**When you buy the retail version, you can use it to continue games started with this demo version.**

Stars is turn-based, not interactive. This means modems can be used to transfer turn files once they are generated. You can do this through a BBS, email, upload/download from an FTP site, or using any other method you wish to transfer files from the host to player systems. There aren't any special transfer protocols for modem users--you're just uploading or downloading files.

**Tip:** Notice the [Accelerated BBS Play option](#) in the Advanced Game setup. You may wish to check this option during setup to jump-start the game.

Before you begin setup, have your players [design their races](#) and give you the race files for loading into the game. Alternately, you can customize a for any player who wishes it.

To set up a modem or email-based game:

1. Click on **New Game** on the opening screen or on **File (New)** from the Stars! main menu. The New Game dialog appears.
2. Click on **Advanced Options**, then specify options such as the universe size, difficulty level, relative starting positions, accelerated play for BBS games, the number and type of players (real or AI), and the [victory conditions](#). Create [player positions for latecomers](#) if you think it's necessary.

The order of players listed in step 2 of the New Game dialog becomes part of the turn filename for each player. The turn file for Player 1 will be *gamename.m1*, for Player 2 it will be *gamename.m2*, and so on.

3. You'll be prompted for a game name. Enter any name up to eight characters long (don't worry about typing an extension). Stars! creates a set of files containing data for that game and each player in the game. You can save the game wherever you wish. By default, Stars! will save the game files in the Stars! install directory.
4. The Stars! Host dialog appears. Click on **Close** to stop the game until all players have submitted their turns. If you'd like to leave Stars! running, click on **Auto Generate**.
5. Before the first turn each player needs to download the universe file, *gamename.xy*, and their player file, *gamename.mN* (where *N* is the player number), for the newly created game. Alternately, you can upload or email *gamename.xy* and *gamename.mN* to each player. These files will be located in the same directory in which you saved the game.
6. Help the players understand what they need to do using the instructions in [What Each Player Needs to Do](#). If you're playing as well as hosting, you'll probably find it easier to start a second instance of Stars!, playing from one and using the other to handle host duties.

After each player has sent you their turn (in the form of the log file, *gamename.xN*) do the following:

1. Place each player's submitted log file in the directory where you set up the game.
2. Start Stars! (if it's not already running), click on **Open Game**, and open the host file, *gamename.hst*.
3. If the Stars! host is set to auto-generate mode, it will automatically generate the new turn as soon as you move the player log files into the game directory. If you're generating turns manually, then select **Generate Now** from the Host dialog. Stars! will continue to follow any existing orders for players who didn't submit their turns on time. All messages and data for the missed turns, such as planets discovered or battles fought, will be present when they load the new turn.
4. Once the turn is generated, notify the players that the new turn is available. You can email or upload

each newly updated *gamename.mN* file or allow each player to download it themselves.

## **Using a Timer App?**

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If you use a timer application to launch Stars! on the host system, take a look at the variety of [command line options](#) that will do such things as start Windows and Stars!, generate the new turn and exit both programs.

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### **Learn about:**

[What Each Player Needs to Do](#)

[Setting and Viewing Winning Conditions](#)

[Playing with a Custom Race](#)

[Saving Your Game](#)

[Exiting Stars!](#)

[Replaying a Previous Turn](#)

[Files Used in Stars!](#)

## What Each Player Needs to Do

[More Hosting Topics](#)

[Other Game Set Up Topics](#)

### Multi-player Games Only

(Optional) Before the host creates a game, use Stars! Custom Race wizard to create a customized race, then give the race file to the host.

Once the host creates the game, do the following on the machine where you'll play:

1. Obtain the *gamename.xy* and *gamename.mN* files, where *gamename* is the name entered by the host in the File Save dialog and *N* is your player number; for example, nonstop.m1.

**Hot Seat play** these files will already be in the game directory shared by all players.

**Network play** -- just access the shared play directory (sharepoint) set up by the host.

**Modem/Email play** -- obtain these files from the host and place them in an arbitrary playing directory you've created on your own system.

2. Place your game files in the same directory each turn. The directory location is your choice--we recommend creating a play directory within the Stars! directory to keep things simple.
3. Start Stars! and click on **Open Game** from the opening screen. Open your player file, *gamename.mN*.

Your game begins, with your home world displayed on the screen and in the Command, Scanner and Selection Summary panes. For the first turn, the Message pane contains tips that help you get started. Investigate your home planet, start basic production and research, and send your scouts out to learn about the nearby worlds.

If you've never played Stars! before, we recommend you [play the tutorial game](#) first to learn basic strategies and to familiarize yourself with all the playing tools.

4. **Network/Hot Seat players** -- Once you finish the turn, select the menu command **Turn (Wait for New)**. Stars! will minimize, waiting for a new turn. When the new turn is ready, it will beep once and flash, while displaying "Turn available".

**Modem/Email players** -- Select **File (Save and Submit)**, then **File (Exit)**. Or, if you're trading turns quickly or leave your computer on for long periods of time, you can also use **Turn (Wait for New)**--a much simpler scenario.

**All players** -- If you wish, you can exit the game before or after you finish the turn. You can save your changes or start the turn again if you don't like the way things are going. Read [Exiting Stars!](#) for more information.

5. If you are playing over a modem or email, upload or email only your log file, *gamename.xN* file to the host system.
6. If you plan to be absent for a turn or more, follow the instructions in [Being Absent from Play](#).

---

### Learn about:

[Your Home World](#)

[Production](#)

[Research](#)

[Setting Fleet Waypoints and Tasks](#)

[Files Used in Stars!](#)

## Being Absent from Play

[More Hosting Topics](#)

[Other Game Set Up Topics](#)

### Multi-player games only

When you miss a turn, Stars! will continue to follow your existing orders. All messages and data for the missed turns, such as planets discovered or battles fought, will be present the next time you load a turn.

Alternately, if you plan on missing more than a few turns, you can ask the host to substitute a housekeeper AI to keep your planets and fleets active. This AI does not develop any strategy for you.

Hot-seat and network players:

⇒ Just tell the host you're going inactive and ask them to substitute the AI in your place.

Modem, e-mail or BBS players only:

1. Give your host a copy of your history file, *gamename.hN*. This will allow the host to update the universe for you while you're gone.
2. Be sure that your host returns the history file and new turn file to you before you open your game. You won't be able to open your turn until this time.

If you're a host:

1. Open the Host dialog, if it's not open yet. Use **File (Open)**, selecting *gamename.hst*.
2. Right-click on the blue diamond next to the name of the player who's absent. Choose **Human (Currently inactive)**.
3. When the player returns, right-click on the diamond and select **Human Controlled**. You'll have to do this before the player can open their player file, *gamename.mN*.
4. If you're running the game over a modem, email or BBS, return the updated history file, *gamename.hN*, and player file, *gamename.mN*, to the player.

### Missing Turns

---

If you miss one or more turns and don't follow the instructions for absent players described above, Stars! will continue to follow any existing orders. All messages and data for the missed turns, such as planets discovered or battles fought, will be present the next time you load a turn.

## Creating a Password

[More Hosting Topics](#)

[Other Game Set Up Topics](#)

### Multi-player games only

Create or change a password for the current game using the Change Password command (Commands menu).

You can create a default game password using the following option in the [Misc] section of **stars.ini** file:

```
DefaultPassword=<password>
```

<password> is the password you wish to use. If you are sure that your opponents will not have access to your stars.ini file you can set this to your password. Whenever you open a game file that is protected by this password you will not be prompted to enter it. If DefaultPassword is not present in stars.ini, type it in under the [Misc] heading.

The stars.ini file is written into your Windows directory the first time you save a Stars! game. It doesn't exist before that time.

### Don't Forget Your Password

If you forget or lose your password, there is nothing you can do to open the password-protected game. We hope you're not reading this because you've forgotten. Don't worry, empires come, empires go.

### AI

There is no valid password for AI players.

### Inactive Players

There is no valid password for inactive players. When the player becomes active again, they get their old password back.

## Creating a Universe from the Command Line

[More Hosting Topics](#)

[Other Game Set Up Topics](#)

### For experienced hosts only

Use the following command to create a new game/universe without using Stars! setup dialogs:

```
stars!.exe -a game.def
```

game.def has the following format:

```
Game Name
Universe Size (0-4) Density (0-3) Starting Distance (0-3)
Maximum Minerals (0/1) Slow Tech (0/1) BBS Play (0/1) .... (other check boxes)
Number of Players, only humans allowed (1-16)
Pathnames to race files
VC # of planets (0/1) Percent of planets (20-100)
VC Tech (0/1) Level (8-26) Fields (2-6)
VC Score (0/1) Score (1000-20000)
VC Exceeds nearest (0/1) (Percent (20-300)
VC Production (0/1) Capacity (10-500)
VC Capital Ships (0/1) Number (10-300)
VC Turns (0/1) Years (30-900)
VC Must Meet (0-7) Minimum Years (30-500)
New universe file name
```

The following is a sample game.def file:

```
Tour of Duty
3 2 2
0 0 0 0 1 1 1
4
c:\stars\play\game.r1
c:\stars\play\game.r2
c:\stars\play\game.r3
c:\stars\play\game.r4
1 60
1 26 4
0
1 150
0
1 100
0
2 150
c:\stars\play\game.xy
```

## Setting and Viewing Winning Conditions

[Game Set Up and Hosting Topics](#)

You can specify one or more winning conditions. Check out [step 3 of the Advanced New Game wizard](#). You can also accept the default conditions provided by Stars!. To view the winning conditions once the game has begun, choose the **View (Race)** menu item, then turn to page 3 of the View Game Parameters dialog that appears.

Because you can control the variety and combination of winning conditions, more than one player can be declared the winner. All players are notified in a message when someone wins. You can continue to play

past this point, or end the game.

You can track the score using **Reports (Score)** menu item (or by pressing F10). The [Score sheet](#) shows your score, your current ranking, and a history of scores since the game began.

## Tuning Stars to Your Display Resolution

### [Game Set Up and Hosting Topics](#)

The higher your screen resolution, the better Stars! will look. However, it will run on any color VGA display.

#### **640 by 480 (VGA)**

---

This is the **minimum required** resolution.

1. Use this menu command: **View (Window Layout > Small)**.
2. Resize each of the windows to optimize the information you need to see at a glance.
3. Collapse tiles in the Command pane, expanding them when needed.
4. If the screen still seems too cramped try hiding the Toolbar using the menu item **View (Toolbar)**. Most of the Toolbar functions are available using [shortcut keystrokes](#).

#### **800 by 600**

---

This is the **minimum recommended** resolution.

1. Choose the menu item, **View (Window Layout > Medium)**. If you're using large fonts, you may find that the small window layout works better for you.
2. Resize each of the windows to optimize the information you need to see at a glance.
3. If the screen still seems too cramped try hiding the Toolbar using the menu command View (Toolbar). Most of the Toolbar functions are available using [shortcut keystrokes](#).

#### **1024 by 768 (or better)**

---

For maximum playing pleasure.

- ⇒ Use this menu command: **View (Window Layout > Large)**.
- ⇒ If you use large fonts, you may need to specify **View (Window Layout > Medium)**.



## Playing with a Custom Race

[Game Set Up and Hosting Topics](#)

You can use one of the races provided with Stars! or build you own, saving it to a file you can use and modify as often as you wish.

---

**Learn the necessary procedures for custom races:**

[Creating and Saving a Custom Race](#)

[Adding an Existing Race to a New Game](#)

[Editing an Existing Custom Race](#)

## Creating and Saving a Custom Race

[Playing with a Custom Race](#)

[Game Set Up and Hosting Topics](#)

There are three ways to enter the [Custom Race wizard](#), where you can create and save races for play in the current game and later games.

### From the Basic New Game Setup

---

If you're using the New Game dialog to create a basic, single player setup:

1. Click on **Customize Race**. The Custom Race wizard appears.
2. Select the options you'd like to try, then click on **Finish** in the wizard. You'll be prompted to [save your race to a file](#), allowing you to use the race again, or modify its attributes. The race is also automatically loaded into your current game.

If you wish to use the race again, you'll need to start the game using the **Advanced Setup** button on the New Game dialog. To learn more, read about [Adding an Existing Race to a New Game](#).

### From the Advanced Setup

---

If you are creating a new game using the advanced setup, use the following steps to create and save a custom race:

1. Click on **Advanced Game** in the New Game dialog.
2. Go to step 2 of the [New Advanced Game dialog](#).
3. Left-click on the blue diamond next to the player position you wish to play. This can be an existing or empty position.
4. Select **Custom Race>New...** from the menu that appears. The Custom Race wizard opens.
5. Select the options you prefer and [save your new race to a file](#).

### Opening the Custom Race wizard from a Game in Progress

---

You can always open the Custom Race wizard during a game in progress. Just use the **File (Custom Race wizard)** menu item. This allows you to create or edit and save a race at any time during play. New races can only be added to new games, however.

## Adding an Existing Race to a New Game

[Playing with a Custom Race](#)

[Game Set Up and Hosting Topics](#)

This is for single player games using the advanced setup or multi-player games. In a multi-player game, only the host performs this action. You can add a custom race to a game only during the setup.

Open the race file in step 2 of the [New Advanced Game dialog](#):

1. Click on the blue diamond next to a player number.
2. Select **Custom Race > Open...**
3. Highlight a [race file name](#) (i.e., *racename.rN*), then click **OK**.
4. That race will be assigned to the chosen player position.
5. If the selected player position followed any unused positions, those positions will also be assigned to that race.

## Editing an Existing Custom Race

[Playing with a Custom Race](#)

[Game Set Up and Hosting Topics](#)

You can edit any number of custom races at any time during play. You won't be able to use the changes until the next game, though.

1. Run the **File (Open)** command. The Open File dialog appears.
2. Navigate to the directory containing the race file.
3. Click on the file (i.e., *racename.rN*), and **OK** the dialog.

The [Custom Race wizard](#) appears, with the race loaded and ready for editing. When you finish, the Save File dialog will appear to save your changes.

## Replaying a Previous Turn

### [Game Set Up and Hosting Topics](#)

Stars! allows you to save previous turns in case you need to resubmit a turn to the host or replay the current turn. You can [specify saving up to 999 turns](#) using an option in the stars.ini file. If you don't specify the number of turns to backup, Stars! backs up only the previous turn. Once you save and submit, Stars! saves the current turn as the most recent backup copy.

To start a turn using data from a previous turn (for example, the last turn played):

1. Copy all files for the current game from the backup directory into the playing directory. For example, if you originally saved the game as "nonstop", copy all files with "nonstop" as the prefix. To ensure that you are choosing the correct files, check the date/time stamp on the backup directory.
2. Choose **Open Game** or **File (Open)**. Select the [player log file](#) player turn file (for example, nonstop.m1), and click **OK**. You should be back where you started, although the universe will reflect the current positions of other players.

---

### Read more about

[Saving Your Game What It Means](#)

# Saving Your Game--What it Means

[Game Set Up and Hosting Topics](#)

## Default Save Behavior

---

By default, saving a game saves only the current state of the current turn. The previous turn's data is saved in a directory called Backup, under the directory in which you're saving the game. Stars! creates the Backup directory automatically. Each time you generate a turn, the old data in the Backup directory is overwritten with the previous turn's data.

## Saving the Current State of Your Game

---

Use the **File (Save)** menu item to save the current state of your game. This is useful if you need to exit the game before you finish your turn. When you restart Stars! just click on the **Continue Game** button to resume where you left off.

If you close the game before saving you will see this alert, you'll be asked if you wish to save before exiting.

## Saving More than One Previous Turn

---

If you'd like to save more than one previous turn for review or any other purpose, do the following:

1. Open the **stars.ini** file for editing. It's a plain text file located in your Windows directory.
2. Under the [MISC] section, set the **Backups** option to a number of turns, between 1 and 999. If the Backup option isn't present, go ahead and type it in; for example:

```
Backups=50
```

Backup directories will be named Backup1 to BackupN. Old game files will be stored in the backup directory according to the turn number. For example when Backups=4 then the first turn would be backed up to the directory backup1, the second to backup2, the third to backup3, the fourth to backup4, the fifth to backup1 and so on.

The stars.ini file is written into your Windows directory the first time you save a Stars! game. It doesn't exist before that time.

## Save and Submit

---

### Multi-player Games Only

Use the **File (Save and Submit)** command to save the current state of your game and submit your turn. In multi-player games, this marks your turn as finished so the host can auto-generate; **Save** does not. This also writes the current turn's files to the backup directory.

If you close the game before saving you'll be asked if you wish to save and submit your turn before exiting.

## Read about

---

[Replaying a Previous Turn](#)

[Exiting Stars!](#)

# Options for Launching Stars!

## [Game Set Up and Hosting Topics](#)

Stars! can be launched from a DOS or Windows prompt, using the stars! command only or with a variety of options. When you use an option, you must also supply either a player or host file name as an argument. You can also supply only the player or host file name without any other options.

With or without options, supplying the file name causes Stars! to start without displaying the splash screen (startup bitmap).

**-s** -- start with battle sound effects turned off

**-m** -- start with game music turned off

**-t** -- try, then exit. If you specify a player file, this opens the newly generated turn. If the turn hasn't been generated yet, then Stars! exits. If you specify a host file, this checks to see if all players have submitted their changes for the turn. If they have, Stars! generates the new turn and exits. Otherwise, it just exits.

**-w** -- wait. If you specify a host file, this auto-generates the new turn as soon as all players have submitted their changes. If you specify a player file, this waits for the new turn to be generated. This option does not cause Stars! to exit.

**-g** -- generate and exit. Specify a host file only. This forces the turn to generate regardless of whether all players have submitted changes, then exits. You can't load a player file when you use this option.

**-p** *password* -- supplies the password on the command line. You can use this with a host file or a password-protected player file.

**-x** -- Exit Windows when Stars! exits. This is a good match with the **-b** option if you wish to create a script that automatically starts Windows, generates the new turn, then exits Windows.

The **-x** flag is for 16-bit Windows only (3.1 or 3.11). Behavior of the **-x** option on OS/2, Windows NT, or Windows 95 is undefined and probably not what you want.

**-b** *gamelist\_file* -- Generate turns for each game listed in the supplied file name.

**-a** *game.def* Create a new game/universe based on the contents of *game.def*. This allows you to create new games from the command line. See [Creating a Universe from the Command Line](#) for more information.

**-h** Causes Stars! to always ask you for a password when you open a turn file. This helps keep the wimps who can't play without cheating out of your turn files. This is especially useful for hot seat play.

## Examples

---

<b>stars! <i>Filename</i></b>	Load a player or host file, starting the game without loading the splash screen.
<b>stars! -w <i>gamename.hst</i></b>	Load the host file and enter Auto Generate mode.
<b>stars! -w <i>gamename.mN</i></b>	Load the specified player file and wait for the host to generate a new turn.
<b>stars! -t <i>gamename.mN</i></b>	Load the specified player file; quit if the host has not yet generated a new turn.
<b>stars! -g <i>gamename.hst</i></b>	Load the host file, force a new turn and quit.
<b>stars! -w -g <i>gamename.hst</i></b>	Load the host file, wait for all players to submit turns, generate and quit.
<b>stars! -t -g <i>gamename.hst</i></b>	Load the host file, generate a new turn only if all players have submitted turns, then quit. If it generates the turn the return value is 1; if the turn is not generated the return value is 0.

**stars! -t -b *gamelist\_file***      Conditionally generate turns for a list of games.

**stars! -x -b *gamelist\_file***      Generate turns for each game listed in the supplied file name, then exit Windows. Useful for BBS play.

For example if your BBS is OS/2, NT or Windows-based you can launch Stars! with the **-b *gamelist\_file*** parameter to batch generate turns for multiple games. Stars! will automatically exit when the last turn has been generated. The file listing the games must contain one game name per line including the full path:

```
c:\games\stars!\play\frenzy.hst  
c:\games\stars!\play\game.hst  
c:\user\jeff\stars!\killer.hst
```

You can name this games list file anything you want. If you are running a DOS-based BBS but have Windows installed on the machine, you can launch Windows and Stars! from a nightly maintenance script similar to this:

**win c:\games\stars!\stars!.exe -x -b c:\games\stars!\gamelist.txt**

This will launch Windows and Stars!, generate a turn for each game listed in gamelist.txt, then exit Stars! and Windows. This method is optimal for Windows 3.1.

If you have Windows for Workgroups installed (Windows 3.11) you need to use the **win /n** option:

**win /n c:\games\stars!\stars!.exe -x -b c:\games\stars!\gamelist.txt**

This will prevent Windows from loading any of its network drivers and suppress its login prompt. If you only need to generate a turn for a single game you can still use the **-g *gamename.hst*** parameter with or without **-x** (use **-x** with Windows 3.1 or 3.11 only).



## Exiting the Game

### [Game Set Up and Hosting Topics](#)

Select **File (Exit)** or **File (Close)**. If you've made changes since the beginning of the turn, Stars! will prompt you to save or, if you're in a multi-player game, to save and submit your turn.

### **Exiting Stars! the First Time**

---

**IMPORTANT:** The first time you play Stars!, exit using the **File (Exit)** command. This writes the [stars.ini file](#) to the Windows directory, saving game options and helping to prevent that pesky serial number dialog from appearing again.

### **Exiting Stars! to Erase Changes**

---

If you want to erase the changes you've made that turn, before you submit, do the following:

1. Choose **File (Close)**, without saving.
2. Select **Open Game** from the opening screen, then choose your [player log file](#) from the Open File dialog. You'll be back at the start of the turn you just left.

### **Save vs. Save and Submit**

---

#### **Multi-player Games Only**

Use the **File (Save and Submit)** command to save the current state of your game and submit your turn. In multi-player games, this marks your turn as finished so the host can auto-generate; **Save** does not.

If you close the game before saving you'll be asked if you wish to save and submit your turn before exiting.

## Adding Expansion Players

If you think there'll be other players joining later in the game, add an Expansion Player for each missing person. Stars! will assign a "housekeeper" AI to run things for those players until they actually join the action. This AI will keep planets and fleets active, making sure the production queues are busy, etc. It does not develop any strategy.

When the player joins, right click on the diamond next to their name in the host dialog and change the type to Human Controlled. Then, give the latecomer a break by asking the other players to leave them alone for N years.

# Planets

## [Playing Stars!](#)

Planets are the gold nuggets of the Stars! universe: everybody wants them, and hardly anyone wants to share. Green worlds give your people a place to grow, learn and produce. The minerals in each planet provide the building blocks for all the technology you create, including planetary installations such as defenses and scanners, and starbases with stargates that act as navigational shortcuts and mass drivers that fling minerals between systems.

When you click on a planet in the Scanner, you're actually selecting a star system. The planet that appears on your screen is the most desirable planet in that system. (There may be lesser rocks in the system, too, but you won't want them.) If you colonize a planet, it becomes your capitol world in that system, the local center of government and industry. If the planet is dangerous to your people, you can mine it from orbit, and ship its valuable minerals to other parts of your empire. If the planet is inhabited by another player, you can try to take it away. If the owner is another human, you can also try to establish trade relations.

No matter how you play, you need to give your people room to grow. That growth rate will vary on any given planet, depending on the levels of gravity, temperature, and radiation. You can create a race that is immune to one or more of these environmental factors a very expensive advantage. You can also make a planet's environment more hospitable by terraforming.

---

### **Read more about Planets:**

[Inhabited Planets](#)

[Population](#)

[Minerals](#)

[Mines](#)

[Factories](#)

[Building Defenses](#)

[Planet-based Scanners](#)

[Orbital Devices](#)

[Terraforming](#)

[Planet Reports](#)

## Your Home World and Other Inhabited Planets

[More General Planet Topics](#)

[Playing Stars!](#)

You start the game on your home world, where you have a small but thriving population, basic industry in the form of factories and mines, fundamental technology, and a short range, planet-based scanner. In orbit, you have a starbase capable of building ships and providing a small amount of planetary defense. Each player's home world, whether it belongs to an [AI](#) or a human, starts out with these same items. When you colonize another planet, you can build these and other items as your [resources](#) and knowledge of technology allow.

All planets contain minerals at the start of the game. All home worlds start with the same surface mineral content -- adjusted to even out any advantages or disadvantages provided by racial attributes. If your home planet has a serious lack of a specific mineral on its surface then your opponents are initially faced with the same problem.

All the information about a planet you own and the controls you use to give orders to that planet are available in [Command pane](#). The [Selection Summary pane](#) shows the gravity, temperature and radiation levels of a planet, as well as the rate at which your population will grow. Environmental conditions on your home world are optimal for your race.

### **Abandoning an Inhabited Planet**

---

When you abandon a planet, the starbase and all defenses on that planet are destroyed.

## Population

[More General Planet Topics](#)

[Playing Stars!](#)

People, along with factories, create the [resources](#) you need to build your empire.

To see how many colonists it takes to produce one resource per year, use the **View (Race)** command and turn to page 5 of the View Race dialog.

Your maximum population is based on the [Habitability Value displayed in the Selection Summary pane](#). For example, a planet with a value of 100% can support 1,000,000 people. A planet with a value of 50% can support only 500,000 people. As your population grows, you'll want to colonize new worlds to prevent your current worlds from overcrowding. Certain racial traits can increase or decrease the maximum planetary population.

---

## Growth Rate

The Value also determines your population's [annual growth rate](#) on that planet. **Left-click on the Value** to display the annual growth rate, as well the total number of people the planet will support based on current environmental conditions. The growth rate is shown as "up to n%" because the rate slows as the population approaches the maximum.

**Population growth begins to plateau after the planet reaches 25% capacity.**

---

## Maximum Population

A planet's maximum population number is also affected by racial traits. The population limit of races with the [Hyper-Expansion primary trait](#) is ½ that of other races -- a 100% planet would be limited to 500,000 people. Races which have the [Only Basic Remote Mining lesser trait](#) get a 10% increase in maximum population over other races -- a race with Only Basic Remote Mining and without the Hyper-Expansion primary racial trait can put 550,000 people on a 100% planet.

Only a planet's maximum population performs useful work. People in excess of the maximum population work at 50% efficiency.

All planets with a positive Value of less than 5% are treated as 5% planets for determining the maximum supportable population.

---

## Overcrowding

Deaths from overcrowding reach a maximum of 12% at 400% capacity.

---

## Killer Planets

Planets with negative habitability values kill colonists, at a percentage rate of Habitability Value / 10 percent of the colonists on the planet per year. For example, a planet with a value -10% inhabited by 2000 colonists will kill 1% or 20 colonists per year.

If you terraform the planet after colonizing, your people will begin to die (unless you have the [Claim Adjuster primary trait](#)).

---

## Alternate Reality Races and Population

Since races based on the [Alternate Reality primary trait](#) live on starbases, they use a different population model. [Read more about them](#).

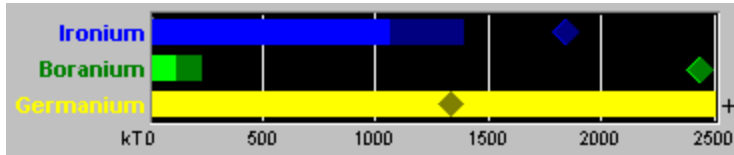
## Minerals

[More General Planet Topics](#)

[Playing Stars!](#)

All planets contain three raw minerals: ironium, boranium and germanium, providing the building blocks for almost everything your race produces. All minerals exist both on and under the planet's surface. Minerals found on the surface can be used immediately in production. Those under the surface must be mined to make them usable. Minerals can also be transported to other planets where they're needed. If you have the race advantage of [Mineral Alchemy](#), you can transform existing resources into minerals without mining.

The [Selection Summary pane](#) shows the surface mineral supply, concentration of minerals under the surface and mining rate for the selected planet. Each mineral is represented by a colored bar. The bright colored bar shows how much of the mineral is on the surface and ready to use; the dark colored bar shows the amount that will be mined next year. The diamond indicates the concentration, from 0 to 200. If you are scanning the planet but don't own it, you'll see only the mineral density. You see all mineral information as soon as you colonize the planet.



Left-click on any of the bars to display the exact quantity, concentration and mining rate of each mineral. You can also obtain this information from the [Minerals on Hand tile](#) when you are commanding the planet.

---

**Learn more about:**

[Mining](#)

[Flinging Mass Packets](#)

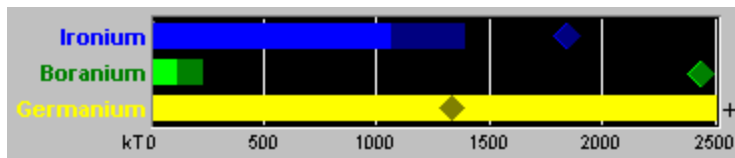
## Mines

[More General Planet Topics](#)  
[Playing Stars!](#)

Mines extract minerals from the planet. As you mine, you decrease the concentration of minerals under the surface, adding them to the supply on the surface and making them available for immediate use. You never run out of minerals on a planet, you just decrease the concentration until it reaches 1, when it becomes difficult to extract more than tiny amounts from each mine each year.

**Your home, or starting world mineral concentration never drops below 30%. This world will still retain this advantage, regardless of who comes to occupy it.**

Use the Scanner or Command pane to [select a planet you own](#). Look at the [Mineral Content Graph](#) in the [Selection Summary pane](#). Each mineral is represented by a colored bar. The bright color shows how much of the mineral is on the surface and ready to use; the dark color shows the quantity to be mined that year. The diamond shows the current mineral concentration, from 0 to 200.



Left-click on any of the bars to display an estimate of the amount the current number of mines will extract in the coming year.

Mining production is also displayed in the [Minerals on Hand tile](#) when you are commanding a planet. This tile also shows you the current number of mines and factories and the maximum number of mines and factories the current population can operate. Left-click on the mines and the factories values for additional details.

You can build mines on any planet you inhabit or use robot miners on uninhabited planets.

---

### Calculating the Rate of Reduction

The number of mine years it will take to reduce the concentration by 1 can be approximated by dividing 12,500 by the current mineral concentration. Mine years is one mine per year: if you are operating 50 mines per year on a planet, that equates to 50 mine years.

The decrease in concentration is solely related to the number of mines you have and the number of years they've been in operation. For two players with the same number of mines operating over the same number of years, the decrease in concentration will be the same for each.

---

### Mineral Concentration and Player Efficiency

The rate of concentration reduction is not related to mining efficiency--the player who is more efficient at extraction will mine more minerals. When the concentration reaches 1 on your planet and an opponent's planet, the player who has the more mines but is not as efficient can do as well as a very efficient player who is operating fewer mines.

To learn how many colonists you need to operate a mine and how efficient the mine is at extraction, choose the **View (Race)** menu item, and turn to page 5 of the View Race dialog.

---

### Alternate Reality Races and Mining

Races based on the Alternate Reality primary trait mine their own planets using remote mining technology only. [Read more about them.](#)

---

Learn more about:

[Mining](#)

Auto-building



## Factories

[More General Planet Topics](#)

[Playing Stars!](#)

Factories, along with people, create [resources](#) used to build items such as ships, mines, defenses and more factories. Resources are also required to research new technologies. In general, any task that requires mental or physical effort requires resources.

To learn how many resources a factory will produce for your race, select the **View (Race)** menu item, and turn to page 5 of the View Race dialog.

You do not need factories to build things. Factories only increase the total number of resources you receive each year. For a typical race, you can double the number of resources generated per year by building factories. Think of factories as 'virtual colonists'. Once built they produce work and consume nothing. Unspent production goes onto research.

Factories cost 4 kT of Germanium to build or, if you selected "Costs One Less" in the Race Wizard, factories cost 3 kT of Germanium. No other minerals are used.

### **Alternate Reality Races and Factories**

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Races based on the Alternate Reality primary trait can not build planetary installations. [Read more about them.](#)

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#### **Learn about:**

[Auto-building](#)

[Research](#)

## Building Planetary Defenses

[More General Planet Topics](#)

[Playing Stars!](#)

Defenses partially protect a planet from bombs and invasion. If you haven't taken the primary trait of Alternate Reality., you should build defenses, especially in a single player game. [AIs](#) love to bomb planets. While you can't build a perfect planetary defense system you can significantly reduce the number of bombs and invading colonists. Whether you build defenses in a multi-player game depends on how much you can trust other players to leave your worlds in peace (there's room enough for all in the Stars! universe--isn't there?)

While you can build as many defenses as you wish, you can only operate as many as your population has resources to handle. When commanding a planet, look at the [Status tile](#) to see both the current and maximum number of defenses, the type of defenses deployed and the percentage of bombs and invading colonists that can be stopped.

As a game progresses, you can increase the number of defenses and upgrade the technology (and the efficiency) of existing defenses:

- ◆ **Adding defenses** increases the number of existing defenses of the type you're currently employing. For example, if you're using Missile Batteries, then adding Defenses to the production queue causes more Missile Batteries to be built. This increases the percentage of coverage.
- ◆ **Upgrading defenses** happens automatically. Whenever you learn new technology that applies to defense, all defenses on all your planets upgrade automatically -- for free.

**For a description of defense technology:**

1. Open the Technology Browser (press F2) and choose **Planetary** from the drop-down menu.
2. Click the **Next** button until you step through the Scanners and reach the Defenses. Each type of defense is described with a graph summarizing its effectiveness.

## Alternate Reality Races and Defenses

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Races based on the Alternate Reality primary trait can not build planetary installations such as defenses. [Read more about them.](#)

## Planet-based Scanners

[More General Planet Topics](#)

[Playing Stars!](#)

A scanner is the planet's radar, giving you information about all objects within its range. There are several types of planet-based scanners, with different ranges for detecting fleets, mass packets, mine fields and wormholes, and different ranges for detecting the environment and mineral content of other planets.

You start the game with a basic scanner on your home planet. As you research areas that gain you new scanner technology, the new scanner types appear in the [Production inventory](#).

To learn about each of the different planet-based scanners and the type of research required to attain them, open the Technology Browser (press F2) and choose Planetary from the drop-down menu.

The cost of building a scanner is fixed. Once you build a scanner, it will automatically be upgraded when your research allows you to build a better scanner.

A planet's scanner type and range appear in the [Status tile](#).

Planet-based scanners are useful for detecting opponent's fleets that pass near or enter your empire. Only fleets that are cloaked have a chance of escaping detection. It's a good idea to build the strongest scanner possible on each of your planets, allowing you to fully cover all your space. You can reduce the chances of fleets sneaking past if you place scanners on all your planets. When you select an enemy fleet, the scanner will also show the estimated path of the fleet.

To view the area covered by your scanners, select the [Scanner pane's Radar overlay](#). Your basic radar coverage appears in red. Planet-penetrating radar coverage appears in yellow. You can also adjust the relative coverage to different percentages, showing your vulnerability to cloaked fleets.

## Alternate Reality Races and Planetary Scanners

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Races based on the Alternate Reality primary trait can not build planetary installations. Read more about how [these orbit-loving nuts](#) perform scanning.

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**Learn more about:**

[Scanning and Cloaking](#)

## **Orbital Devices**

[More General Planet Topics](#)

[Playing Stars!](#)

Orbital devices include:

- ◆ Starbases for planetary defense and ship production.
- ◆ Stargates that provide shortcuts across the universe.
- ◆ Mass drivers for flinging cargo to other planets without the use of ships.

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**Read about Orbital Devices:**

[Starbases](#)

[Stargates](#)

[Mass Drivers](#)

## Starbases

[More about Orbital Devices](#)

[General Planet Topics](#)

A starbase can be an orbiting shipyard (space dock), defensive station, and a platform for both a stargate and a mass driver. Before a planet can build ships, it must have a starbase with a space dock. Starbases stand in the way of attacks against the planet--your fleet must destroy the starbase before bombing can commence. Starbases with weapons always strike back and can initiate attacks against enemies in orbit.

A starbase can also carry cloaks, and thus can partially cloak itself from remote scans. Cloaking a starbase does not cloak the planet.

Your starbase is your primary defense against bombing and invasion by enemy fleets. Your planet can not be bombed or invaded as long as your starbase still exists. Defend it well.

In the [Scanner pane](#), a starbase appears as a yellow or blue dot orbiting the planet. The [Starbase tile](#) describes a starbase belonging to the planet you're commanding.

You can find details on a specific starbase hull design in the Technology Browser: press F2, click on the dropdown list and choose the Starbase Hulls category.

### Building a Starbase

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Build a starbase by adding it to the production queue. Like a ship, cost depends on the type and number of items attached to the hull. You'll find that a starbase hull is very expensive, so you'll need to plan how to afford it. You'll also find that hull parts attached to a starbase are 50% cheaper than the same parts attached to ship hulls, helping balance out the cost and making the replacement or addition of components easier to handle.

A planet can have only one starbase at a time. An existing starbase can be upgraded or replaced, with credit given for the recycled materials.

You'll have access to additional starbase hulls if you have the [Improved Starbases trait](#).

### Starbase Design

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There are five starbase hulls, with slots for weapons, armor and other items:

- ◆ **Orbital Fort** -- No ship building capacity. These don't count as starbases in the score.
- ◆ **Space Dock** -- Ship building capacity: 200kT or smaller ships. This hull requires the [Improved Starbases lesser trait](#).
- ◆ **Space Station** -- Unlimited ship building capacity.
- ◆ **Ultra Station** -- Unlimited ship building capacity--more slots for weapons, shields and other components. This hull requires the Improved Starbases trait.
- ◆ **Death Star** Top of the line orbital habitat for races based on the [Alternate Reality primary trait](#).

For Alternate Reality races the starbase also determines their maximum population. Read more about [these unusual Stars! denizens](#).

### Upgrading a Starbase

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You can upgrade a starbase by changing the hull or by adding or changing items in the hull slots. You receive full credit for the existing installation, paying only the difference between the old and new hulls. The upgrade appears in the production inventory, ready for you to add to the production queue when you wish.

Here's how the cost is determined:

**If the hull changes:**

- ◆ You receive a 50% credit for minerals and resources used in the original starbase.

**If the hull does not change:**

- ◆ Slots where the components don't change are free.
- ◆ Slots where only the count of the component increases cost only the component price multiplied by the number of additional items.
- ◆ Slots where the component type changes to a similar component are discounted in cost; the discount based on the closeness of the part types.
- ◆ Slots where the component type changes dramatically cost the full price of the new component. You will receive some minerals back if the old components are recycled.

### **Sorting Starbases for Easy Upgrades**

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1. Press F3 to open the [Planet Summary Report](#), then maximize it.
2. In the report, sort (or reverse sort) by Starbase. Just click on the top of the Starbase column and selecting the sort.
3. In the report, find the first planet with a starbase design you want to upgrade.
4. Click on the Production column for that planet. The [Production dialog](#) opens, showing the queue for that planet.
5. In the Production dialog, double click on the new design listed in the production inventory (left-hand list).
6. Click on **Next**. Notice that the **Next** and **Prev** buttons follow the sort order of the report.
7. Keep adding upgrades for each planet until you've upgraded all that need it.
8. Close the Production dialog and the report.

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### **Learn about**

[Hull Design](#)

[Adding Items to the Production Queue](#)

## Stargates

[More about Orbital Devices](#)

[General Planet Topics](#)

Stargates are optional starbase components that provide cargo-less ships with fuel-free, single year transport between your planets. This is the optimum way to move scouts and warships when you're in a hurry, or any other ship that isn't carrying anything but Fuel.

In the [Scanner pane](#), the stargate appears as a green dot orbiting the planet.

All stargates require research into Construction and Propulsion. The Orbital section of the Technology Browser describes capabilities for each stargate.

If you choose the major racial trait [Interstellar Traveler](#), your starbases with stargates will scan any planet in stargate range that also has a stargate.

## Building a Stargate

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A stargate occupies an Orbital slot in a starbase hull. You can add a stargate by upgrading an existing starbase hull or building a new hull.

To upgrade a hull and add the gate:

1. Select **Commands (Ship Design...)** to open the [Ship Designer](#).
2. Under Design, click on **Starbase**.
3. Select the design you wish to upgrade from the dropdown.
4. Click on **Copy Selected Design**. The dialog changes, offering the design and a component list.
5. Select a hull picture and type in a new name, or use the defaults shown in the dialog.
6. Drag the stargate from the component list to an Orbital slot in the design. Subtract and add any other components as you wish.
7. Click on **OK**. Then click on **Done** to close the dialog.
8. [Add the new design](#) to the planet's production queue.

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### Learn about:

[Navigating Using Stargates](#)

[Designing Hulls](#)

## Mass Driver Basics

[More about Orbital Devices](#)

[General Planet Topics](#)

Mass drivers provide a fuel-free method of transporting mineral cargo packets between planets, and, secondarily, can act as an effective long range weapon. Mineral packets are bundles of Ironium, Germanium and Boranium. Mass drivers fling mineral packets at high rates of acceleration. This prevents you from flinging Fuel, which would explode, or colonists, who would, well, also explode.

In the [Scanner pane](#), the mass driver appears as a purple dot orbiting the planet.

## Building a Mass Driver

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A mass driver occupies the Orbital slot in a starbase hull. You'll have to research Energy--the requirement for each type of driver is listed in the Orbital section of the Technology Browser.

Once you complete your research, upgrade your starbase hull design to hold the driver (or design a new starbase hull that includes the driver). To upgrade a hull and add the driver:

1. Select **Commands (Ship Design...)** to open the [Ship Designer](#).
2. Under Design, click on **Starbase**.
3. Select the design you wish to upgrade from the dropdown.
4. Click on **Copy Selected Design**. The dialog changes, offering the design and a component list.
5. Select a hull picture and type in a new name, or use the defaults shown in the dialog.
6. Drag the driver from the component list to an Orbital slot in the design. Subtract and add any other components as you wish.
7. Click on **OK**. Then click on **Done** to close the dialog.
8. [Add the new design](#) to the planet's Production queue.

## Flinging Packets

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⇒ Target a mass driver by clicking on the **Set Dest** button on the [Starbase tile](#), then selecting a target in the scanner.

The path to the mass driver target is then displayed in the Scanner. You can also target the mass driver by SHIFT-clicking on the destination planet.

For the packet to arrive safely, the target must also have a driver of equal or greater capacity. If the planet has a lesser mass driver, or no driver at all, the packet destroys colonists and installations on the planet surface.

The gauge in the Starbase tile allows you to control the speed at which packets are flung. You can purposefully fling packets at a slower speed if your receiving planet isn't equipped with an accelerator that's high tech enough to catch the packet at full speed.

You may fling packets at speeds up to three Warp levels above the rated speed. Packets flung above the rated speed become unstable, decaying at 10% per year for one warp level above the rated speed, 20% for two warp levels, and 50% for three warp levels. For players with the [Packet Physics primary trait](#), decay rates are half the stated levels. Packets decay in the year they are launched and in the year they arrive at a planet proportional to the distance they travel in those years.

During a packet's first year out, it travels only half the normal distance, then the normal distance in any following years of travel. Since production happens all year long, the packets could be launched at any point. Stars! simplifies this by averaging it out to a half-year's travel.

## Building Packets

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Mineral packets are built and flung as a function of the [Production queue](#). The Production inventory will list a packet for each mineral and a mixed packet that contains all three minerals. When you click on a packet type in the inventory the numbers below the inventory show how many kT of each mineral the packet contains. Once a packet is built, the driver automatically flings them at the destination you've set. If you don't set a destination, the packet disintegrates.

The [Scanner pane shows mass packets](#) within your scanner ranges, regardless of who the packets belong to (unless you have the [Packet Physics primary trait](#)).

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## Packets as Scanners

For races with the Packet Physics primary trait the mineral packets have the added feature of behaving like a [planet-penetrating scanner](#). The radius of the scan is equal to the square of the packet's warp speed.

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## Packets Perform Terraforming

For races with the [Claim Adjuster primary trait](#), the mineral packets only do 1/3 the normal damage when hitting a planet, but have a 50% chance per 100kT of minerals to terraform the planet's environment toward the Claim Adjuster's ideal value. There is a lesser chance that it can permanently alter the planet's environment, allowing you to move it even further.

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## You Can't Attack Packets

You can't attack mineral packets. You can only intercept them and transfer their contents to your fleet, as described below.

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## Stealing Mass Packets

If you can intercept a mineral packet in flight you can steal from it. When a packet is at the same location as your selected fleet, it appears in the [Other Fleets Here tile](#). Use the **Cargo** button and the Cargo Transfer dialog that appears to transfer minerals from the packet to your fleet.

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## Building Two Mass Drivers on a Starbase

You can build up to two identical mass drivers on the same starbase (assuming you haven't used an Orbital slot with a stargate already). This has two advantages: 1) you can catch incoming packets at one warp speed greater than the driver's nominal rating; and 2) overflung packets from dual drive starbases decay as if they were flung at one warp speed lower.

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## Packets as Weapons

Packets flung at planets with a lesser mass driver or no mass driver damage the planet and kill inhabitants. A warp 13 mineral packet is about as close as Stars! comes to a doomsday weapon.

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### Learn about:

[Flinging Mineral Packets](#)

[Mineral Packet Bombardment](#)

[The Guts of Mass Drivers](#)

## Terraforming

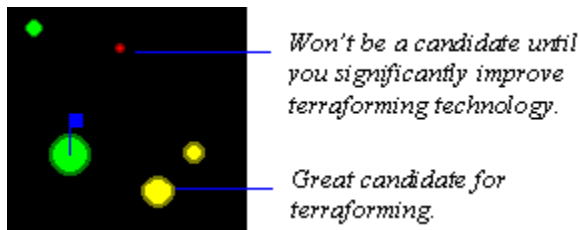
[More General Planet Topics](#)

[Playing Stars!](#)

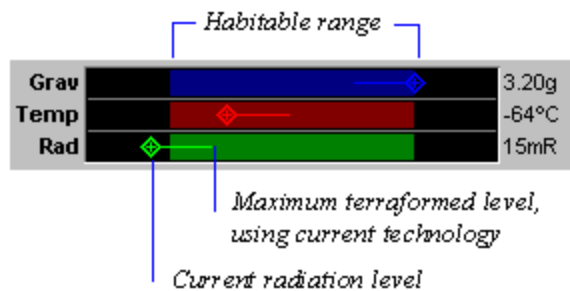
Terraforming is the ability to change a planet's environment to make it more habitable for your race. If you are immune to environmental conditions, you don't need to terraform.

To see your race's habitability range, choose the **View (Race)** menu item, then turn to page 4 of the View Race dialog.

You won't know if you need to terraform or can terraform a planet unless you can scan it, gathering information about the planet's environment. To see all terraformable planets you've found use the Scanner pane's [Planet Value view](#). You possess the technology to terraform Yellow planets, making them habitable. Most green planets can also be terraformed to improve them. The larger the yellow dot, the better the planet will be once you terraform it:



Click on a planet in the Scanner pane, then look in the [Selection Summary pane](#). The habitability value shows the current value of the planet followed in parentheses by the value the planet would be after terraforming (given the limits of your current technology). The environment graph shows how much you can modify the planet's environment, given your level of terraforming technology. The following graph shows that the player possesses Gravity, Temperature and Radiation terraforming technology, and that Radiation must be terraformed to make the planet habitable. Gravity is right at the edge of this race's habitable range, and should be terraformed at least a small percentage. Terraforming the Temperature will improve conditions even more.



You don't have to worry about the order in which the different factors are terraformed. The terraforming task that appears in the production dialog always works on the factor that is the furthest out of range. If you can improve Gravity by 3%, Temperature by 5% and Radiation by 2% the Production dialog will let you add 10% Terraforming to the queue. Each 1% Terraforming task executed will modify one of the environmental factors by 1%, which will improve the overall habitability value by at least 1% and probably more.

Find out which factor should be terraformed to maximize the planet's habitability value by clicking in the environment graph of the Summary pane. A pop-up will tell you the potential increase in habitability value if you modify that factor to the limits of your current technology.

## Colonists Die if Minimum Terraforming Lasts more than One Year

If it takes longer than one year after colonizing to bring the planet to a Habitability value of 0% or better, your colonists will start to die. If you can bring it within range the first year, they'll be fine. This is the best reason for [creating a production template](#) that contains auto-build terraforming tasks.

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**Read more about Terraforming:**

[How to Terraform](#)

[Types of Terraforming Technology](#)

[Total Terraforming](#)

[Claim Adjusters and Terraforming other Player's Planets from Orbit](#)

## How to Terraform

[More about Terraforming](#)

[General Planet Topics](#)

There are two basic ways to terraform a planet. The first and easiest is to add auto-build terraforming tasks to the production queue. Min and Max Terraforming are auto-build tasks which remain in the queue and operate only when both necessary and possible. These can be added manually or using a production template. The second method is to manually add the Terraform Environment task to the production queue.

Terraforming tasks can use only the terraforming technology you possess. So, if you have only Radiation and Temperature Terraforming, you can't modify only gravity. The terraforming will automatically act first on the environmental attribute which when modified will most improve the planet's habitability.

### Terraforming with Auto-build Tasks

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1. Bring the planet you wish to terraform under command.
2. Click on the **Change** button in the [Production file](#), opening the Production dialog.
3. In the production inventory, click on either the Min or Max Terraform auto-build tasks. Then click on the **Add** button to raise the limit to which the task will terraform.

#### Min and Max Terraforming:

Minimal (Min) terraforming changes only those environmental attributes that have a negative value and that you have the technology to change, up to the percentage you specify in the task. Terraforming will continue only until the planet value reaches zero. To go beyond the point of minimal terraforming, you must manually add Terraform Environment or the Max Terraforming auto-build task. Minimal Terraforming will activate and terraform only when there are resources available and not doing so would cause people to die on the planet (from negative environment values or overcrowding).

Max Terraforming changes any environmental attributes that you have the technology to change, up to the percentage you specify in the task.

As each terraforming task completes, an environmental factor is improved by 1%.

### Terraforming as a Default Action

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You implement default terraforming by defining a default production template that includes auto-build terraforming tasks. This is done through the production dialog.

Auto-build items do not need to be consecutively listed nor do they need to appear at the top of the queue to work.

1. Make sure the auto-build terraforming items in the production queue are arranged in the sequence you want them to appear in the template.
2. Make sure the Contribute only Leftover Resources to Research checkbox is set the way you want it to be reflected in the template. A checked box is reflected at the bottom of the dialog by the words "Don't contribute to research" while an unchecked box is reflected by the words "Contribute to research".
3. Right-click on the blue diamond and select <customize>.
4. Select <Default>.
5. Click on **Import** and **OK** the dialog.

That's it. The default production orders will take effect on every planet taken over or newly colonized. It does not affect any planets where colonists have already landed.

### Adding Terraforming to the Queue Manually

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1. Double-click on the planet you wish to terraform, placing it in the Command pane.
2. Click on the **Change** button in the Production tile, opening the Production dialog.
3. In the production inventory, click on the Terraform Environment task. Then click on the **Add** button to add the desired number of this task to perform.

Each Terraform Environment task you add to the production queue improves an environment factor by 1%. The number of tasks you may add to the queue is limited by the current level of your terraforming technology. When you have successfully completed all the tasks you can add to the queue, the Terraform Environment task disappears from the production inventory. It will reappear once you achieve a higher level of technology that allows you to terraform further.

Races based on the [Claim Adjuster primary trait](#) have access to ship components that can terraform other players planets from orbit.

---

**Learn about:**

[Creating a Production Template](#)

## Types of Terraforming Technology

[More about Terraforming](#)

[General Planet Topics](#)

Each of a planet's three environmental factors has a matching type of terraforming technology: Temperature Terraforming, Gravity Terraforming, and Radiation Terraforming. Each requires a different combination of research:

- ◆ Temperature terraforming requires research into Biotechnology and Energy.
- ◆ Gravity terraforming requires research into Biotechnology and Propulsion.
- ◆ Radiation terraforming requires research into Biotechnology and Weapons.

The [Total Terraforming trait](#) requires that you research only Biotechnology to learn terraforming technology

Each technology allows you to improve a specific factor a minimum of 3% from its initial value and a maximum (without Total Terraforming) of 15%.

The percentage of improvement does not always indicate how much the [Value of the planet](#) will increase. Often only one or two environmental factors will be negative, while the remaining factors look pretty attractive. In this case improving the negative factors can improve the planet's overall value to a much higher percentage than that indicated by the technology.

As you upgrade your terraforming technology, you'll see the amount you can improve the planet increase. You may also see that some planets that were previously not terraformable (red in [Planet Value view](#)) become terraformable (yellow in Planet Value view).

To learn more about the individual types of terraforming technology and their research requirements, open the Technology Browser (Press F2) and select Terraforming from the dropdown menu.

## Total Terraforming

[More about Terraforming](#)

[General Planet Topics](#)

Total Terraforming is a lesser trait, not a type of technology.

To determine if your race has this trait, choose the **View (Race)** menu item and turn to page 3 of the View Race dialog.

Total Terraforming races begin the game with the ability to improve temperature, gravity and radiation levels up to 3%. Terraforming requires 30% less resources and you can research terraforming technologies that improve factors up to 30% instead of just 15% normally. Terraforming requires research into only Biotechnology, instead of Biotechnology and three different additional fields.

## Claim Adjusters and Terraforming Other Players' Planets from Orbit

[More about Terraforming](#)

[General Planet Topics](#)

Races based on the [Claim Adjuster trait](#) can terraform other player's planets from orbit. This creates unique opportunities for diplomacy or war. If the owner is your Friend, you automatically perform positive terraforming (adjusting planetary conditions toward the inhabitants' optimal conditions). If the owner is your Enemy, you perform negative terraforming.

Terraforming from orbit requires a fleet outfitted with Orbital Adjusters. These are described in the Mining Robots section of the Technology Browser. Every race with the Claim Adjuster trait starts out with one ship outfitted with Orbital Adjusters.

Specify Friends and Enemies using the Player Relations dialog (press F7).

Terraforming from orbit is a great vehicle for diplomacy: in return for other technology, an alliance, or just a plain thank you, you can help your friends make their planets a better place to live. Only offer this assistance to friends who have lesser terraforming capabilities than yourself. Terraforming is not additive you can't combine your orbital terraforming abilities with those of the inhabitants to super terraform the planet. The planet will only be terraformed to the limits of whoever possesses the superior technology. For example, if the inhabitants have 3% terraforming and you possess 5% terraforming, the planet can be improved up to 5% from its original conditions (not exceeding optimal conditions for the inhabitants).

Terraforming from orbit can also be used as a weapon: just orbit the planet and start to terraform it under your opponent's feet. This allows you to prepare more favorable conditions for a planetary invasion. You must destroy any existing starbase before you can launch this type of attack. Depending on your opponent's level of terraforming technology, using terraforming as an attack could turn into a shoving match if they begin terraforming operations of their own.

Terraforming from orbit happens automatically as soon as your fleet arrives. Just set the destination planet as the fleet waypoint. No waypoint task is necessary.

### **Retro Bomb**

Claim Adjusters also can gain the Retro bomb, a type of terraforming weapon used to return the planet to it's original conditions.



## Planet Reports

[More General Planet Topics](#)

[Playing Stars!](#)

The Planet Report displays the same information displayed by the Command pane, but for all your planets. You can use the report to change the order in which planets appear in the Planet tile and the Production dialog according to any category in the report.

A planet report contains the following information:

**Planet name** the color of the dot, if present, indicates the type of starbase, and whether a mass driver and stargate are present. In the report, the name of the planet currently in the Command pane is highlighted.

Yellow starbase has a space dock (can build ships)

Blue starbase without a space dock

Purple -- mass driver

green -- stargate

**Starbase** Click to display the starbase design.

**Population** Current population. Click to display details.

**Cap** Percentage of planetary population capacity.

**Value** Shows the maximum population percentage relative to maximum growth under optimal conditions (100%). An accompanying number in parentheses indicates the value after terraforming using your current technology. Click to display details.

**Production** the item at the top that planet's production queue. Click to access the queue.

**Mine** Number of mines in existence. Click for details.

**Fact** Number of factories in existence. Click for details.

**Defense** Type of planetary defenses.

**Minerals** Number in kT of each type of Mineral on the planet surface. Click on each number for details about that mineral.

**Mining Rate** Mining rate of each mineral in kT/year. Click for details.

**Min Conc** Mineral concentration for each type of mineral. Click for details.

**Resources** Resources available for use by the planet, followed by total resources generated by the planet. Click for details, including the number of resources dedicated to research.

**Driver Dest** Destination for the starbase's mass driver.

**Routing Dest** Destination planet for ships routed from production.

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**Learn more about:**

[Changing the Order of Planets in the Production dialog](#)

[Sorting Starbases for Easy Upgrades](#)

# Production

## [Playing Stars!](#)

You use production to build things, including ships, mines, factories and defenses and to do tasks, such as terraforming. The Production dialog lists all the things you can build or tasks you can perform on a specific planet, commands that allow you to add these items to the queue, and information that tells you how much each item will cost and when or if it will be completed given your available [resources](#).

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## **Read more about Production:**

[How Production Works](#)

[Adding an Item to the Queue](#)

[Removing an Item from the Queue](#)

[Clearing the Production Queue](#)

[Production Templates](#)

[Unblocking a Queue](#)

[Adding Auto Build Items in the Queue](#)

[Changing the Order of Planets in the Production dialog](#)

[Conditions that Affect Production](#)

## How Production Works

[More about Production](#)

[Playing Stars!](#)

You have one [production queue](#) per planet. The queue is essentially a work list. Items are produced in the order shown in the queue, from top to bottom. You can add, delete or move items at any time, anywhere in the queue. The percentage complete is shown for the selected item. If you add an item to the top of the queue in front of something that is partially complete, your people will not work to complete the original item until the new item you placed in the queue is complete or has been deleted. In all cases, production is halted if the planet runs out of minerals.

The [production inventory](#) lists all the things you know how to build or tasks you can currently perform on that planet.

### Unique Items

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When a planet can only use one of an item, such as a planet-based scanner or starbase, the item appears only once in the inventory. When this kind of item is added to the queue, it disappears from the inventory. As soon as the item is built, all lesser models of the same item disappear from the inventory.

### Upgrades of Existing Items

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Upgrades of existing items, such as stargates and starbase hulls, will replace any older versions in the inventory list. When you upgrade a item, it is labeled in the inventory as an upgrade. Since upgrades enhance rather than replace an item, they only require enough minerals to create the enhancements.

## **Adding an Item to the Production Queue**

[More about Production](#)

[Playing Stars!](#)

You can add an item at any time to any spot in the [production queue](#) . The procedure is slightly different depending on whether you want to do the following:

[Add an item to the top of the queue](#)

[Add an item to the middle of the queue](#)

[Add an item to the bottom of the queue](#)

[Move an item in the queue](#)

## Add an item to the top of the queue

1. Click on --- **Top of the Queue** ---.
  2. Click on an item in the inventory, then click the **Add** button or double-click on the item in the inventory list.
- ⇒ To add additional units, keep clicking the Add button or double-clicking on the item in the inventory list.

### **Large orders**

Pressing CTRL+SHIFT when clicking on the **Add** button will add as many of that item as possible. This also works if you press CTRL+SHIFT and double click on the item.

### Add an item to the middle of the queue

1. Click on the item in the queue under which you want the new item to appear.
  2. Click on an item in the inventory list, then click the **Add** button, or double click on the item in the inventory list.
- ⇒ To add additional units, keep clicking the **Add** button or double-clicking on the item in the inventory list.

#### **Large orders**

Pressing CTRL+SHIFT when clicking on the **Add** button will add as many of that item as possible. This also works if you press CTRL+SHIFT and double click on the item.

### Add an item to the bottom of the queue

- ⇒ Click on the last item in the queue, then on an item in the inventory list. Then click the **Add** button, or double click on the item in the inventory list.
- ⇒ To add additional units, keep clicking the **Add** button or double-clicking on the item in the inventory list.

#### **Large orders**

Pressing CTRL+SHIFT when clicking on the **Add** button will add as many of that item as possible. This also works if you press CTRL+SHIFT and double click on the item.

### Move an item in the queue

1. Click on the item in the queue that you want to move.
2. Click on the **Item Up** or **Item Down** buttons.



## Removing an Item from the Production Queue

[More about Production](#)

[Playing Stars!](#)

- ⇒ Select an item in the queue, then click the **Remove** button or double-click on the item in the queue.
- ⇒ Keep clicking the **Remove** button or double-clicking on the item name to remove additional units.

### **Speed Removal**

Pressing CTRL+SHIFT when clicking on the **Remove** button will remove as many of that item as possible. This also works if you press CTRL+SHIFT and double click on the item.

## Production Templates

[More about Production](#)

[Playing Stars!](#)

A production template is a sequence of auto-build items imported from a production queue and saved for later use. Use production templates to automate auto-build production strategies you plan to use more than once. The default production template is automatically applied on any planet taken over or newly colonized by your people. The other three templates can be manually applied to any planet's production queue. Templates are saved for the duration of the game but may be edited at any time.

You implement templates by simply selecting the template name instead of manually adding the items to the production queue. When you apply a template, all auto-build items currently in the queue are replaced with the list of items in the template.

### Production Template Strategy

---

To help illustrate how production templates are useful, here's a typical example of a good default template for new colonies:

Minimum Terraform Up to 10% Factories (Auto Build) Up to 10 Mines (Auto Build) Up to 10 Defenses (Auto Build) Up to 2 Factories (Auto Build) Up to 25 Mines (Auto Build) Up to 25 Maximum Terraform Up to 10% Defenses (Auto Build) Up to 5

#### Minimum Terraform Up to 10%

The planet will work on terraforming first if it is possible and people might die otherwise. This handles fledgling negative worlds, overcrowding and disasters.

#### Factories (AB) Up to 10 / Mines (AB) Up to 10

You want constant progress on improving the planet's productivity. This is what fledgling colonies spend most of their time doing.

#### Defenses (AB) Up to 2

If the planet is doing well enough to complete all those mines and factories you can afford to work on defenses a bit to keep from falling way behind. Fledgling colonies don't make it this far.

#### Factories (AB) Up to 25 / Mines (AB) Up to 25

At this point we want to ensure the planet has the maximum number of mines and factories. Only mature planets will reach this point.

#### Maximum Terraform Up to 10%

Push a mature planet to perfection. The mines and factories are probably maximized for the current population so, if possible, increase the maximum population and growth rate.

#### Defenses (AB) Up to 5

Add defenses if the colony has the maximum number of mines and factories possible for the current population.

#### Contribute only Leftover Resources

While the colony is fledgling it is a good idea to have 'Contribute only leftover resources to research' checked. When the colony reaches the point where the defenses are being auto-built you can deselect this option.

### Creating a Template

---

Auto-build items do not need to be consecutively listed nor do they need to appear at the top of the list to work.

1. Make sure the auto-build items in the queue are arranged in the same order in which they should appear in the template.
2. Make sure the 'Contribute only Leftover Resources to Research' checkbox is set the way you want it

to be reflected in the template. A checked box is indicated at the bottom of the Production dialog by the words "Don't contribute to research" while an unchecked box is indicated by the words "Contribute to research".

3. Right-click on the blue diamond and select <customize>.
4. Select default or one of the three other template choices.
5. Click on **Import**.
6. Type in a name for the template and **OK** the name dialog.
7. **OK** the Template dialog. The template is now ready to apply. If you created a default template, it will be applied automatically whenever you establish a new colony.

### **Manually Applying a Template**

---

Right-click on the blue diamond and select a template to apply to the current production queue. The auto-build items in the template are applied underneath the last item currently in the queue.

### **Editing a Template**

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1. Repeat steps 1 & 2 above.
2. Right-click on the blue diamond and select <customize>.
3. Select the template to be edited.
4. Click on **Import**.
5. Type in a new name for the template if you wish and OK the name dialog.
6. Click on **OK**. The edited template is now ready to apply.

### **Renaming or Deleting a Template**

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1. Right-click on the blue diamond and select <customize>.
2. Select one of the three non-default templates. Click on Delete to erase the template contents and it's name or click on Rename and type in a new name.

The default template cannot be renamed. To clear the contents of the existing default template you must import an empty production queue.

## Clearing the Production Queue

[More about Production](#)

[Playing Stars!](#)

⇒ To remove all items from the production queue click on the **Clear** button in the Production dialog or the [Production tile](#).

If the item is removed from the queue before completion, resources and minerals already spent on the item are lost.

## Unblocking a Production Queue

[More about Production](#)

[Playing Stars!](#)

If one of your planets has run out of minerals while producing an item in the [production queue](#), the item name turns red. This means it'll never be completed unless you do something about it. You have two choices: transport minerals from other planets or use [mineral alchemy](#) (or use a combination of the two).

### Transporting Minerals

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To transport minerals, set up freighter waypoints to transport minerals from your remote miners or mineral-rich planets to your planet with the blocked production queue. If you have a mass driver on the needy planet and the mineral-rich planet, you can also [fling mineral packets](#) between planets without using ships.

### Mineral Alchemy

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Mineral alchemy transmutes [resources](#) into minerals (sort of your own Philosopher's Stone). If you can't complete an item in the queue because you've run out of one or more minerals, place mineral alchemy in the queue ahead of the item you're trying to build. Each unit of mineral alchemy will turn a mere 100 of your resources (25, if you have the [Mineral Alchemy lesser trait](#)) in 1 kT of each of the three minerals. This is a good strategy for unblocking queues on a planet where you have a large population and can quickly replace the resources used by alchemy .

Add as many mineral alchemy units as you need to finish the item stuck in the queue. Like other items in a queue, the color of each Mineral Alchemy task will tell you how long it will take for the process to complete. If you have a large number of resources dedicated to production, you can create a large amount of minerals fairly quickly.

Mineral alchemy is one of the items available for [auto-building](#). Consider adding it to your default or a custom [production template](#), if it isn't already there. If auto-alchemy is placed in front of an item, it will be used only if you have a mineral shortage. If it is the only item in the queue, it will create resources until you remove it or place another item immediately following.

## Adding Auto-Build Items to the Queue

[More about Production](#)

[Playing Stars!](#)

Auto-build items are always in italic, but appear differently in the production inventory and queue.

When they're in the inventory, they are labeled as Auto-build. When you add them to the queue, they are labeled <Item> up to <number>; for example, 'Factories Up to 50'. The latter number indicates that the queue will ATTEMPT to produce the stated number of that item every year.

Auto-build Mineral Alchemy is the exception. It displays as 'Mineral Alchemy as needed'. If you insert it in front of an item in the queue you want to perform as much Alchemy as possible to maximize the production rate for that item. If you already have enough minerals, Mineral Alchemy isn't needed and doesn't happen. It's a great insurance policy that always does the right thing. If Alchemy is the last item in the queue, it means to spend all remaining resources on Mineral Alchemy.

Auto-build items can be used to create a default queue for newly colonized worlds, or for items you wish to produce on any world whenever extra resources are available for production, or when the queue is empty of anything but auto build items. For example, early in the game, it's useful to continuously build mines and factories. It's always useful to auto-terraform when conditions are less than perfect and you have the means.

Like any production item, auto build items can be inserted anywhere in the queue. An auto build item stays in the queue until you remove it. This means your production queue will annually attempt to build these items when possible. You can always place other items ahead of auto-build items, or rearrange the items in the queue. Auto build items that cannot be built are skipped.

There are, however, differences between the behavior of auto-build items and others in the queue:

- ◆ Auto-build items do not block the queue. If they cannot be performed, they are skipped over.
- ◆ Auto-build items are never automatically removed from the queue. They remain there until manually removed and activate only when necessary and possible.
- ◆ You never make "progress" on auto-build items. When work is done it is seen as a partially completed normal build item in the queue.

Auto-build items include [Mines](#), [Factories](#), [Defenses](#), [Mineral Alchemy](#), [Terraforming](#), and autobuilding and flinging [Mineral Packets](#) (if you have a mass driver).

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### Learn more about

[Adding Terraforming to the Queue](#)

[Adding an Item to the Production Queue](#)

## Changing the Order of Planets in the Production dialog

[More about Production](#)

[Playing Stars!](#)

You can use the Planet report to change the order in which planets appear in the production queue.

1. Press F3 to open the Planet report.
2. Click at the head of any column, choosing a sort that appeals to you. You may want to sort by starbase, by production, mines, factories anything you wish.
3. Click on the Production column for a planet. The Production dialog will open with that planet's queue displayed.
4. Click on **Next**, paging through the queues for each planet. Notice they appear in the order you specified in the report.

This allows you easily find the planets that may need upgrades of a specific type (such as starbases) and add the upgrades to the production queue.

Changing the sort order of planets also changes the order in which they appear when you click on **Next** and **Prev** in the [Planet tile](#).

## Conditions that Affect Production

[More about Production](#)

[Playing Stars!](#)

### Race Traits

---

Page 5 of the View Race dialog tells you if you excel at building and operating factories and mines, as well as how many [resources](#)  $N$  colonists generate each year (not counting the resources created by factories). The more each of the following conditions are true, the more your race will excel at production:

- ◆ One resource is generated each year for every seven colonists.
- ◆ Factories produce 15 resources per year.
- ◆ Every factory requires five resources (and the usual amount of minerals) to build.
- ◆ Colonists may operate 25 factories.
- ◆ Factories cost one mineral less to build.

Of course, the mining rate also affects production. The closer your race is to meeting one or more of the following conditions, the better:

- ◆ Mines produce 25 kT of minerals per year.
- ◆ Every mine requires two resources to build.
- ◆ Every 10,000 colonists can operate 25 mines.

### How Research Makes Production Cheaper

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Production of a particular item becomes cheaper when all research requirements are surpassed by one level: for example, an engine that requires research level 3 Propulsion and level 1 Energy becomes 4% cheaper when you attain level 4 Propulsion and level 2 Energy, 16% cheaper with level 7 Propulsion, level 5 Energy, and so on. You can eventually reduce the cost of producing some items by 75% (or 80%, if you possess the [Bleeding Edge lesser trait](#), which also decreases costs at a rate of 5% per level instead of the normal 4%).

### Disaster Strikes Planet X!

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When comets or other naturally occurring blunt instruments crash into inhabited planets, the planet's [production queue](#) is reset. All work in progress is lost, including the resources spent on that work. It's not all bad. Usually a cosmic barrage brings extra minerals that you can apply immediately to production.

---

Learn more about:

[Factories](#)

[Mines](#)

[Research](#)



## Research

### [Playing Stars!](#)

You can't go from rubber band drives to ramscoops or from binoculars to 520X planetary scanners without applying mental elbow grease. This means research. Fortunately, to conduct research in Stars!, you need to know nothing of physics or animal husbandry, biomechanics or elastic waistbands. You only need to know which general areas of technology you wish to research and how many [resources](#) you wish to allocate to that research. That, pushing a couple of buttons, and being patient, will gain you access to all the technology you need to rule the known Stars! universe.

Before you start researching, spend a little time in the Technology Browser (press F2). Learn about the types of technology available to your race, the items you want to build, and which areas and levels of research are needed to do that.

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### **Read more about Research:**

[Fields of Study](#)

[Viewing Stars! Technology](#)

[Allocating Resources for Research](#)

[The Cost of Research](#)

## Fields of Study

[More about Research](#)

[Playing Stars!](#)

There are six fields of study: Energy, Weapons, Propulsion, Construction, Electronics, and Biotechnology. You can research only one at a time. The levels of proficiency range from 0 to 26 (at 26, you are a techno-geek summa cum astrolabe, a level that 20th century hi-tech moguls can only daydream about reaching). When you complete a research level, new technology becomes available to you.

Going beyond the level needed to produce an item has cost benefits: for every technology level you achieve above the required level, the production cost of that item is reduced by 5%. You can eventually reduce the production costs for many items by 75%. This is also referred to as miniaturization.

The type of research needed to gain a technology depends on the function of that technology. For example, most ship hulls require Construction research only. Some technology requires research into more than one area: Gravity Terraforming requires research in both Biotechnology and Propulsion.

Use the [Research dialog](#) to specify a field of study and the percentage of [resources](#) you wish to apply annually to that research. The dialog also displays the specific technology you'll gain by achieving the next few levels in that field. Resources applied to research are taken off the top of your resource heap. This allocation is modified only if you check **Contribute only leftover resources to research** in the [Production dialog](#), which reverses the order, allocating resources to production first, then research.

You can change research fields before achieving a new level. Stars! keeps track of how much progress you've made in a field, allowing you to return to a partially researched field at any time without losing progress.

## Choosing the Next Field of Study

---

You can queue your next field of interest using the Next Field to Research dropdown in the Research dialog. This switches your research as soon as you reach the next level in your current field. All resources not needed to reach the next level in your current field are applied to the next field.

If you achieve the maximum level for a field and forget to specify a new field, Stars! automatically selects the least researched field.

## Viewing Stars! Technology

[More about Research](#)

[Playing Stars!](#)

The Technology Browser provides details about every technology you can learn through research, including ship components, planetary installations and terraforming. To enter the Technology Browser, press F2 or choose the **Help (Technology Browser)** menu item.

*To find an item quickly, select a technology category from this dropdown list.*

The screenshot shows a window titled 'Engines' with a dropdown menu set to 'Engines'. The main content area displays details for the 'Radiating Hydro-Ram Scoop' technology. On the left, there is an icon of a radiation symbol and a ram scoop. To the right, a table lists resource costs: Ironium (3kT), Boranium (2kT), Germanium (9kT), and Resources (8). The total mass is listed as 10kT. Below this, technical requirements are shown: Ener: 2 (black), Prop: 6 (red), and Cost: 1670. A line graph titled 'Fuel Usage vs. Warp Speed' shows fuel usage starting at 0% until warp 6, then rising to approximately 600% at warp 10. A warning message at the bottom states: 'This engine creates powerful waves of radiation and will kill some of your colonists if the midpoint of your race's Radiation band isn't at least 85mR.' At the bottom left, there is a checkbox for 'Show Only Available Technology' and a 'Close' button. Three blue lines with text labels point to specific parts of the window: one to the resource table, one to the graph, and one to the warning message.

Resource	Cost
Ironium	3kT
Boranium	2kT
Germanium	9kT
Resources	8

**Mass: 10kT**

**Tech Req:**  
Ener: 2  
Prop: 6  
Cost: 1670

**Fuel Usage vs. Warp Speed**

Warp	Fuel Usage
0	0%
1	0%
2	0%
3	0%
4	0%
5	0%
6	0%
7	~100%
8	~300%
9	~500%
10	~600%

**Warnings and special notes about availability and race.**

Show Only Available Technology

Close

Cost appears when you haven't completely researched the technology required to build the item. The color of each required research field tells you whether you've completed the necessary level of research. Red indicates you have more research to do, black indicates that you have reached the necessary level. The number next to each field is the level to attain. The Cost is the number of resources needed to build that item.

**Learn more about:**

[Technology Data Tables](#)

## Allocating Resources for Research

[More about Research](#)

[Playing Stars!](#)

For research, you receive all [resources](#) from planets with nothing in the [production queue](#) and with auto-build turned off. You receive all unspent resources from planets with items in the queue. If the **Contribute only leftover resources to research** box is selected, you'll only receive the resources left over if the queue is emptied that turn. If this box is not selected, you'll receive the percentage of resources you indicated in the [Research dialog](#), plus any resources left if the production queue is emptied that turn. If the production queue is blocked you'll receive all the resources from that planet for that turn.

Predicting the amount of time it will take to complete a research level is slightly tricky. Stars! displays an **Estimated time to completion** in the Research dialog. The estimate is based on an unchanging supply of resources, including the following:

- ◆ all resources from planets with empty production queues and non-active auto-build
- ◆ allocated resources from planet's items in production but who are dedicating resources to production first (**Contribute only leftover resources to research** box is not selected).

To get your best estimate of how long research will take, look at both the current time estimate and the number of resources allocated the previous year (also shown in the Research dialog). Each turn, check how much the estimate changes as a result of changing conditions in your empire.

To get a more accurate estimate, assign or change your research allocation as the last task of your turn. By then, Stars! will know how many resources are required for production and will remove those from the calculation for research time.

## The Cost of Research

[More about Research](#)

[Playing Stars!](#)

Research becomes more expensive for each level of technology you achieve. You spend [resources](#) to do research. Research in any field becomes progressively more expensive, increasing in a [Fibonacci type series](#). The total cost equals the cost for that field plus the [added cost](#) of 10 resources per field of study per level you've already achieved. This cost is calculated for you in the Research dialog.

In general, you should pick which technology you wish to learn, then research only the field(s) needed for you to be able to gain that technology. Then you'll never use more resources than necessary to learn a technology. Ultimately, though, it costs the same to research all technology. The added costs encourage you to develop a few initial technologies quickly and take them out into the universe.

Research can be cheaper for some races than others. To learn how efficient your race is at performing research, choose the **View (Race)** command, then turn to page 6 of the View Race dialog. Both the Technology Browser and pages 2 and 3 of the View Race dialog show you which technologies you won't be able to research due to a race traits. The Research dialog shows you only the technology that's available to your race.

## Designing Ship and Starbase Hulls

### [Playing Stars!](#)

Use the [Ship Designer dialog](#) to create, edit and delete new ship and starbase designs. Once you create a new ship design you can add it to the production queue of any of your planets that has a starbase with a space dock.

You don't need a starbase present to build another starbase. If your colony has the resources, just add the starbase to the queue.

### **Maximum Number of Designs, Ships and Fleets**

---

There are limits to the number of designs, ships and fleets you can have in the game. Develop strategies that take these limits into account.

- ◆ Different ship designs per player: **16**
- ◆ Total ships of each design in a fleet: **32,000**
- ◆ Fleets per player: **512**
- ◆ Different starbase designs per player: **10**

**Determining the Number of Fleets:** To determine the number of fleets you currently have select Report/Fleets. The total count of your fleets is displayed in the title bar of the report.

---

### **Read more about Designing Ships:**

[How to Approach Hull Design](#)

[Designing a New Hull from Scratch](#)

[Editing an Existing Hull Design](#)

[Deleting a Hull Design](#)

[Reaching the Maximum Number of Designs](#)

[Counting the Number of Hull Designs](#)

[Adding Ship-based Scanners](#)

[Adding Cloaking Devices](#)

[Engines](#)

[Learning About Other Player's Hulls](#)

## How to Approach Hull Design

[More about Hull Design](#)

[Playing Stars!](#)

Develop a strategy for deciding when to create a new design. If you create a new design every time you successfully research a new piece of technology, chances are you'll have too many ships of similar design out in space at the same time. Try to leave room for at least one additional design, so that you can create a new design quickly without first deleting an existing design. You could also create a new design for an existing class of ship, such as a colonizer, when the existing design has outlived its usefulness.

### **Example Obsolescence Strategy**

If you colonize everything within the reasonable range of your current colonizers, you may want to delete the old design and replace it with a new one.

Spend time in the Technology Browser (press F2) learning about the ship technology you think you'll want to research. Take ship design into account when you plan your research strategies. If possible, design new ships only when you gain the technology you need to make a significant advance over older designs.

Once you're ready to build, follow the steps for using the Ship Designer dialog:

[Designing a New Hull from Scratch](#)

[Editing an Existing Hull Design](#)

## Designing a New Hull from Scratch

[More about Hull Design](#)

[Playing Stars!](#)

To design a new ship from an empty hull schematic:

1. Select **Available Hull Types**.
2. Click on the hulls dropdown list and select a design name.
3. Click on **Copy Selected Design**.

If the **Copy Selected Design** button is shadowed, you've reached the maximum of 16 concurrent ship designs. You must delete an existing design before you can design a new ship.

**Tip:** You can use **Copy Selected Design** to clone a known enemy ship design (although the results may not be perfect).

4. Attach components to the hull by dragging them from the collection of ship components to a compatible tile on the ship schematic.

**Tip:** Hold down the CTRL key to drag as many items as the slot can hold, or the SHIFT key to drag 4 parts at a time.

5. Use the spinner controls below the ship picture to choose a representative image for your new design.
6. Click in the name field and type in a name for the new ship design.
7. **OK** the dialog.

## Reaching the Maximum Number of Fleets

If you already have 512 fleets (the maximum), you'll have to merge or scrap a fleet, or place a fleet in orbit of the planet producing the new ship. The ship will be added to the existing fleet automatically.



## Editing an Existing Hull Design

[More about Hull Design](#)

[Playing Stars!](#)

Do the following if you want to change an existing design or create a new design based on the existing design. You can edit a design only if none of your existing ships use that design.

1. Select **Existing Ship Designs**.
2. Click in the ships dropdown list and select the design name.
3. Click on **Copy Selected Design**.

If the Copy Selected Design button is shadowed, you've reached the maximum of 16 concurrent ship designs. You must delete an existing design before you can design a new ship.

If the **Edit Selected Design** button is shadowed, there are existing ships based on this design. Only designs for which no ships exist may be edited.

**Tip:** You can use **Copy Selected Design** to clone a known enemy ship design (although the results may not be perfect).

4. Drag the components to be removed from the ship schematic to the collection of ship components and release.

**Tip:** Hold down the CTRL key to drag all items from the slot, or the SHIFT key to drag 4 parts at a time.

If you wish, replace the old components with new ones from the ship component list. Drag them over to the ship schematic and release.

5. To change the image for the design, click on the spinner controls beneath the ship picture.
6. Save the design:

To save the design under the same name, click on **OK**.

To rename the design (creating a new design), click in the name field and type in a new name. Then click on **OK**.

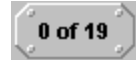
## Deleting an Existing Hull Design

[More about Hull Design](#)

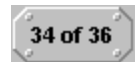
[Playing Stars!](#)

If you delete an existing design, all ships that use that design are destroyed, and their minerals are lost to the cosmos. If you wish to retrieve some of the minerals used in the ship, scrap all the ships using that design, then delete the design.

A plaque appears below ship schematics of existing designs. It tells you how many ships built on the selected design still exist. If you delete an existing design, any existing ships built with that design will be destroyed.



In this case, all of the 19 ships built on this design have already been destroyed. Deleting this design will not destroy any existing ships.



In this case, 34 out of the 36 ships built on this design remain intact. Deleting this design will destroy all 34 remaining ships. Ships destroyed by this mechanism are not recycled for scrap.

To delete an existing design:

1. Select **Existing Ship Designs**.
2. Click on the ships dropdown and select the design to delete.
3. Click on **Delete Existing Design**.

## Reaching the Maximum Number of Designs

[More about Hull Design](#)

[Playing Stars!](#)

- ◆ Different ship designs per player: **16**
- ◆ Total ships of each design in a fleet: **32,000**
- ◆ Different starbase designs per player: **10**

Although Stars! will let you know if you've reached the maximum number of designs when you try to create a new design, you're better off keeping track of the number yourself.

If you've reached the design limit of 16 and wish to create a new design, you'll have to delete an existing design first. To delete a design, use the [Ship Designer dialog](#). Develop strategies for deciding when to create new designs and when to obsolete older designs.

Stars! will gray the **Copy Selected Design** button in the Ship Designer once you reach 16 designs.

Pick a design that is no longer useful (too slow, ineffective weapons). Before you delete the design, think of the most advantageous way to get rid any existing ships of that design. For example:

- ◆ You could send each ship of the design to planets that need minerals. Set the waypoint task at each planet to **Scrap Fleet**. A portion of the minerals will be returned to the surface supply on that planet. If you use this method, you'll have to wait until all the affected ships reach their assigned waypoints.
- ◆ Delete all the ships at in one stroke using the Ship Designer dialog. You'll be warned that all the ships of that design will be destroyed. When you delete ships this way you receive NO minerals.
- ◆ If the ships of the type you wish to delete use any weapons, use them in a large battle as distracting cannon fodder, possibly keeping your more advanced ships safer a little longer.

Click here to learn how to [count your total number of designs or all ships of a single design](#).

## Counting the Number of Hull Designs

[More about Hull Design](#)

[Playing Stars!](#)

To learn the total number of designs you've created:

1. Select the menu command, **Commands (Ship Design)**, to open the Ship Designer dialog.
2. Select **Existing Ship Designs**.

Click on the dropdown next to the ship picture and count the number of designs.

To learn how many ships of a single design are in play:

1. Select **Existing Ship Designs**.
2. Click on the ship name in the dropdown:
3. Look at the number displayed on the plaque under the drop down:



The first number shows how many ships of that type still exist, the second shows how many you built since creating the design. Here, one ship was built and is still in play.

**Tip:** You can locate all ships of one type using the [Ship Design Filter in the Scanner pane](#).

## Adding Ship-based Scanners

[More about Hull Design](#)

[Playing Stars!](#)

To gather any planet details from orbit or space, or the details of an opponents' fleet from a distance, most fleets must have a ship-based scanner. Scanning a planet you don't own will supply data about the planet's environment and subterranean mineral content only. Ships without scanners must send down a robot miner to gather the same information and can only detect an opponents' ship if it is at the same X,Y coordinates.

### **Minerals Above the Surface**

You learn how many minerals are on the planet surface and available for immediate use only after colonizing the planet.

## Scanner Types

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There are three basic types of ship-based scanners: those that scan planets from orbit; those that scan planets from orbit and fleets from a distance; and those that scan both planets and fleets from a distance. One scanner, the Chameleon, doubles as a cloaking device.

### **Scanners for Pirates**

The Pick Pocket scanner can see the contents of an enemy fleet's cargo holds. The Robber Baron scanner can see surface minerals on enemy planets. These scanners aid the modern pirate in making wise choices on issues concerning pillage and plunder.

## Your First Scanner

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You start the game with the Bat scanner, a low-tech device that detects planet details only from orbit, and has no long-range fleet-detection capability. You'll want to browse the more advanced models. For a description of all the different scanners, take a look inside the Technology Browser (press F2).

## Scanners are Cumulative

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Multiple scanners on a single ship are cumulative. Fleets are still limited to the range of the best ship in the fleet, but a particular ship's scanner range is a modified sum of the ranges of its scanners. The formula for calculating a ship's scanner range is the 4th root of the sum of each scanner to the 4th power. Let's say you have a ship design with two 100 light year scanners and one 60 light year scanner.  $(100^4 + 100^4 + 60^4)^{1/4} = 120$  light years. The same calculation applies to planet penetrating scanners.

**Learn more about:**

[Scanning the Universe](#)

## Adding Cloaking Devices

[More about Hull Design](#)

[Playing Stars!](#)

A cloaking device reduces the range at which your opponents' scanners can detect your fleets. There are several different types of cloaks, each reducing opponents' scanner range by a specific percentage. The higher the percentage, the more the range is reduced. Cloaks on a ship can all be the same strength or of different strengths. Cloaking is shared by an entire fleet: every ship not carrying a cloak is covered until it leaves the fleet.

When designing a ship, you can add a cloaking device to any slot labeled Electrical or General Purpose.

Races with the [Inner Strength primary trait](#) can learn how to build Tachyon Detectors. This device has the ability to reduce the effectiveness of other player's cloaking devices.

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**Learn more about:**

[Cloaking Your Fleets from an Opponent](#)

## Engines

[More about Hull Design](#)

[Playing Stars!](#)

There are two basic types of Engines: the standard engine, which requires the Fuel available at all full-serve starbases; and the ramscoop engine, which scoops its fuel from the stuff of the universe. Both engines types have an absolute maximum speed of Warp 10. Each type has advantages and disadvantages, and several require the presence or absence of certain race traits. For details on a specific engine, see the Engines section of the Technology Browser.

### Standard, Fuel-hungry Engines

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Engines that require Fuel will serve you well in the early stages of the game. If you chose the lesser trait of [No Ramscoop Engines](#) when you created your race, you'll use standard engines during the entire game. In this case, the Interspace-10 will be available to you.

### Ramscoop Engines

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Ramscoops draw their fuel from space, making them the cheapest engines to operate. The Radiating Hydro-Ram Scoop engine radiates massive quantities of radiation and shouldn't be used for colonist transportation, unless your race's OPTIMAL radiation level is AT LEAST 85mR. For example, a range of 80 to 90mR would work, as would a range of 70 to 100mR--as long as the midpoint is 85mR or higher. If the range is, say, 35 to 95mR, it won't work, because the optimal level for that race would be 65mR.

**IMPORTANT POINT!** The optimal radiation level is the CENTER point of the habitat range for Radiation. Use the **View (Race)** command to learn your race's optimal radiation level.

Ships with ramscoops incur greater damage when struck by mines than other ships.

You won't be able to build ramscoop engines if your race has the [No Ramscoop Engines](#) trait.

### Overthrusters

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Overthrusters give you an advantage in battle and help compensate for any movement penalties caused by hull and cargo mass. One Overthruster gives the ship one extra half square of movement per [round of battle](#), with each additional Overthruster providing an additional half-square. Overthrusters are described further in the Mechanical section of the Technology Browser.

### Maneuvering Jets

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Like Overthrusters, Maneuvering Jets give you an advantage in battle. One Maneuvering Jet gives the ship a speed bonus of one-quarter extra square of movement per round of battle. Each additional Maneuvering Jet provides an additional one-quarter square of movement. Maneuvering Jets are described further in the Mechanical section of the Technology Browser.

#### Learn more about:

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[Setting Fleet Speed](#)

[Using Fuel](#)

[Initiative and Speed](#)

[The Battle Board](#)

## Learning About Other Player's Hulls

[More about Hull Design](#)

[Playing Stars!](#)

When you encounter an opponent's ship, you automatically detect its basic hull type. If you enter into a battle with the ship, you learn which components are used in the design as well. To review enemy hull designs:

1. Select **Enemy Hulls**.
2. Click in the hulls dropdown and select a design.

**Tip:** You can use **Copy Selected Design** to clone a known enemy ship design (although the results may not be perfect).

A schematic of the ship displays its details. If you've encountered the ship in passing, only an empty schematic is displayed. If you've met that devil in battle, all the components are displayed. Right-click on a component to display further details.

The [War Mongers](#) possess the nasty ability to know all ship designs the second they see them and don't have to fight them in battle to figure things out.

## Trading Hull Designs

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You can use the [Transfer Fleets waypoint task](#) to trade hull designs with other players. To receive a fleet you must have less than 16 different designs (the maximum allowed). You will also need to meet the research requirements for any new hull components before you can build ships based on the new design.



# Managing Fleets

## [Playing Stars!](#)

A fleet is a distinct group of one or more ships, and can be any mix of ship types. Fleets can be created, merged, and split at any point in the game. You design the ship types, add them to production queues, create fleets, then assign waypoints and tasks. Fleets can be used for exploration, defense and offense, colonizing, remote mining, and transporting minerals and people.

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## **Read more about Managing Fleets:**

### [Assembling Fleets](#)

### [Setting the Fleet's Speed](#)

### [Finding a Single Fleet](#)

### [Finding a Specific Fleet Composition](#)

### [Switching Between Fleets](#)

### [Naming Fleets](#)

### [Using Fuel](#)

### [Routing Fleets](#)

### [Rendezvousing Fleets](#)

### [Splitting and Merging Fleets](#)

### [Scrapping Fleets](#)

### [Reports on Your Fleets](#)

## **Assembling Fleets**

[More about Fleets](#)

[Playing Stars!](#)

Each player can have up to 32,000 ships of each design in a fleet, with up to 16 different designs, and up to 512 fleets.

For some tasks a fleet with a single ship is sufficient. For example, exploration and colonization usually only require one ship outfitted with the appropriate technology. However, for moving large quantities of minerals around, for defending your planets and for attacking other players it's very useful to have large groups of ships in a single fleet.

You can merge and split fleets as you wish. The only stipulation is that the affected ships must be in the same location.

## Warp Speed

[More about Fleets](#)

[Playing Stars!](#)

A fleet's warp speed determines the number of years it takes to reach a waypoint, as well as fuel usage. You set the speed in the [Fleet Waypoints file](#), using warp units. Actual distance traveled is the square of the warp speed. For example, a fleet traveling at Warp 8 will move up to 64 light years each turn.

The Fleet Waypoints tile always suggest an optimum speed to reach the waypoint, using the least amount of fuel to deliver the fleet in the shortest amount of time. If a stargate is present and safe to use for travel between waypoints, it is automatically selected. If the fleet has [Scrap Fleet](#) or [Colonize](#) orders, or includes a hull with a colony pod, the fleet travels at the maximum possible speed for its engine and fuel supply.

## Maximum Speed

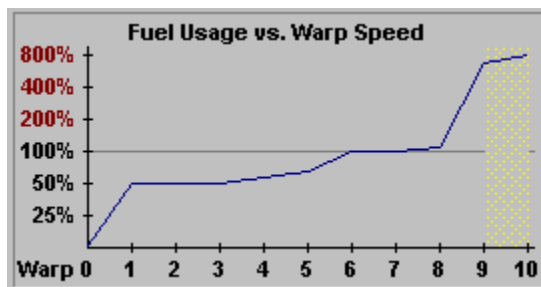
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All engines have an absolute maximum speed, a maximum safe speed, a maximum free speed and an optimum speed.

The absolute maximum speed for all engines is warp 10. The maximum safe speed for most ships is warp 9. You can push your fleet to warp 10, but you'll have a 10% chance of losing each ship in the fleet at that speed. Only ships using Warp 10 capable engines can travel safely at warp 10. You can tell if an engine is warp 10 capable by viewing it in the Technology Browser and seeing if the area between Warp 9 and 10 is covered with a yellow warning pattern or not.

For most standard engines the maximum free speed is warp 1. This means that you can travel at warp 1 using no fuel.

For standard engines the optimum or best warp speed is the maximum speed at less than 120% fuel usage. For Ramscoop engines the best warp speed is the maximum speed that the engine can travel using no fuel. To learn the best speed for a specific engine, visit the Engines section of the Technology Browser. The Fuel Usage vs. Warp Speed graphs in the Browser shows this speed for each engine. The following graph shows that the best warp speed for this engine is warp 8.



The yellow grid between warp 9 and 10 shows that the ship using that engine has a 10% chance of self-destructing while traveling at warp 10.

The Galaxy Scoop engine defaults to Warp 10 if going that speed will reduce travel time. See the Engines section of the Technology Browser for more information.

## Travel Warp 1 without Using Fuel

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Any ship can travel Warp 1 without using fuel. This means you travel 1 light year per year of play. You also generate tiny amounts of fuel at Warp 1, and may be able to put on small bursts of speed. This really is helpful only if you're close to your destination, almost out of fuel, and don't want to bother sending a rescue ship.

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Learn more about

[Navigation Using Stargates](#)



## Finding a Single Fleet

[More about Fleets](#)

[Playing Stars!](#)

The simplest way to locate a planet or fleet is to use the Find command. Use either the **Command (Find)** menu command, or press CTRL-F.

### To find a fleet of your own

- ⇒ Enter the fleet number using any format (i.e. fleet #58, fleet 58, #58, 58, etc..).
- ⇒ Enter the full name of the fleet.

### To find another player's fleet

- ⇒ Enter the fleet identification using this format:
- ⇒ race\_name "fleet" "#"(fleet\_number)
- ⇒ Example: tritizoid fleet #125

If Stars! says it cannot find a planet or fleet by that name, try again, making sure you type the correct name or number, or that you used the correct format for finding another player's fleet. If you still can't find a fleet, it may not exist any more.

## Finding a Specific Fleet Composition

[More about Fleets](#)

[Playing Stars!](#)

If you are looking for a fleet with a specific composition:

1. Select the [Ship Design Filter overlay in the Scanner](#).
2. Select the type of ship you're looking for from the list that appears. Only fleets that contain that type of ship will appear in the Scanner.
3. Double-click on the fleets shown in the Scanner. If more than one fleet is at a location, continue to click. As you click, the fleets will cycle through the Command pane. You can also use the **Next** or **Prev** buttons on the [Fleet tile](#).

The composition of each fleet will be listed in the [Fleet Composition tile](#).

## Switching Between Fleets

[More about Fleets](#)

[Playing Stars!](#)

Switch between fleets using one of the following methods:

- ⇒ Using the Find command (CTRL-F), then clicking on the ship in the [Scanner pane](#).
- ⇒ Pressing the **Prev** and **Next** buttons on the [Fleet tile](#) to scroll through all your fleets in the Command pane. The fleets are enumerated in the current sort order of the Fleet Summary Report.
- ⇒ Click a location where more than one fleet is present. Right-click on the spot and select another fleet from the popup list. Or just continue to click in the location until the fleet appears in the Fleet tile.
- ⇒ In the [Other Fleets Here tile](#), select a fleet from the dropdown list.

## Naming Fleets

[More about Fleets](#)

[Playing Stars!](#)

1. Select the fleet you wish to rename, displaying it in the [Fleet tile](#).
2. Click on the **Rename** button in the Fleet tile.
3. Replace the existing text with your own more descriptive label.
4. **OK** the Rename dialog. The new name appears in the Fleet tile and anywhere else you'd expect the name to be displayed.

You can use either the new name or the original fleet number when searching for a fleet with the [Find dialog](#). Other players see only the original fleet number, not the new names.



## Using Fuel

[More about Fleets](#)

[Playing Stars!](#)

Fuel is made of antimatter and is measured in milligrams (mg). This means it has no real affect on the ship's mass (and thus, fuel usage). Fuel is a manufactured commodity that can only be obtained from starbases with ship building capability or from other fleets. It is also created by ships traveling at their engine's free speed and by fuel tankers and by ships with Anti-Matter Generators.

Fuel is shared by all ships in a fleet. The fuel capacity of a fleet is the sum of the fuel capacity for each ship in the fleet. The rate at which fuel is used is based partially on the mass of the all ships and cargo in the fleet.

Fuel usage is also based on the rate at which each ship in the fleet uses fuel at a given speed. All ship types can move at any speed, but they each burn different amounts of fuel to achieve that speed. The total fuel usage for the fleet is the sum of the fuel usage for all the individual ships.

Fuel usage between waypoints is shown in the [Fleet Waypoints tile](#). The amount shown for reaching the selected waypoint is always exact.

## Sometimes Slowing Down Uses More Fuel

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Each year's travel is a separate jump that uses a finite, countable number of milligrams of fuel. Let's say that you have a fleet that can travel at warp 5 for 3mg per year of travel. A journey of 100ly would take 4 years and use 12mg of fuel. If you slowed down to warp 4 it would only cost 2mg per year of travel but the journey would take 7 years for a total of 14mg of fuel. This is a case where it is more economical to go at the faster speed.

**Tip:** Since fuel is shared by the entire fleet, you can help guarantee that a ship with a low fuel capacity reaches its destination by merging it into a fleet with a large fuel capacity.

## Refueling

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To refuel, simply visit one of your planets with a starbase with ship building capability in orbit. You'll be refueled automatically. Fuel can also be [transferred between fleets](#) manually or with a [Transport waypoint task](#).

## Fuel and Combat

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Ships don't use fuel while in combat.

## Fuel Transports

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Fuel transports produce 200 mg of fuel each year, regardless of how far they travel.

**Tip:** Fuel transports also cause damaged ships in the fleet to heal 5 or 10% faster, depending on the hull type.

## Fuel and Ramscoop Engines

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Ramscoop engines draw fuel from surrounding space, allowing them to travel up to a certain speed at no cost. If you load fuel on a fleet using ramscoop engines and set a speed greater than that allowed for free travel, the fleet will travel at the set speed until it runs out of fuel, then slow to the maximum free speed for that ramscoop. Ramscoops generate fuel when traveling at the free speed. Traveling at speeds below the maximum free speed can generate even more fuel.

### Speed for Free

Each type of Ramscoop has a different maximum speed for travel without using Fuel. See the Engines section of the Technology Browser for more information.

## **Fuel, Stargates and Wormholes**

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Ships don't use fuel while traveling through a stargate or a wormhole. However, with a stargate you're limited to fleets that do not carry cargo (other than Fuel).

Wormholes are unstable and can wander. Be sure that any fleet using a wormhole has enough fuel to return to a friendly planet should the opposite end of the wormhole travel and deposit the fleet far from the expected location.

## **Running Out of Fuel (Well, Nearly)**

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Even the best of us occasionally runs out of gas. The same is true for you as an Emperor. For ships with Ramscoop engines this isn't a problem as they will automatically slow down and continue their journey at their fastest free speed. For ships with normal engines you have several choices. If they are worth saving you can send a fleet to rescue them. If they aren't worth saving then you can either just ignore them or scrap them. Or you can let them limp home at Warp 1.

Any ship can travel Warp 1 without using fuel. This means you travel 1 light year per year of play. You also generate tiny amounts of fuel at Warp 1, and may be able to put on small bursts of speed. This really is helpful only if you're close to your destination, almost out of fuel, and don't want to bother sending a rescue ship.

### **Fuel Warning in the Fleet Waypoints Tile**

When you choose a waypoint you can't reach given the current speed and fuel supply, the Fuel Usage amount turns red.

## Routing Fleets

[More about Fleets](#)

[Playing Stars!](#)

Routing automatically sends fleets from one planet to another. Stargates are used, if they are available. If the destination planet is yours, and it has a route destination, the fleet can be passed automatically to the next point.

Routing is most useful in large universes where you are regularly distributing new ships from specialized production centers to other points in your empire. Routing can also be used to send existing fleets from one side of your empire to the other, specifying only one waypoint within fuel range..

To set a route destination:

1. Click on the **Route** button in the planet's [Production tile](#).
2. Move your cursor to the scanner and click on the route destination. A line appears between the origin and destination. Any ship that has route orders will be sent to this destination, as well as any newly built fleet.

To change the route destination:

⇒ Click on the **Route** button, then click on the new destination.

To remove a route:

⇒ Click on **Route**, then click on the planet of origin.

To pass fleets from route destination to route destination:

1. Set a route destination for each planet in your circuit or path.
2. Select the fleet to be routed.
3. Using the Waypoint Tasks tile, assign the fleet [Route orders](#). When it arrives at a planet with a route destination, it will automatically be passed along. If the planet has a starbase, the fleet is automatically refueled as well.

## Route Behavior

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If the route destination is an uncolonized planet and fleet includes remote miners, its orders are automatically changed at the destination to [Remote Mining](#). If the route destination is a planet with your mining fleet already in orbit, the final waypoint task is automatically changed to [Merge with Fleet](#).

Route will not auto-colonize at the destination. You must specify colonization orders upon the fleet's arrival.

## Rendezvousing Fleets

[More about Fleets](#)

[Playing Stars!](#)

It's useful to specify one fleet as a destination for another if you are transferring cargo between fleets (for example, between a remote miner and a freighter), merging fleets, or chasing an opponent's fleet.

To rendezvous one fleet with another, just select the current position of the destination fleet as the waypoint for the fleet that wishes to intercept it. As long as the destination fleet can be detected by the pursuing fleet's scanner, this fleet will follow the destination fleet until it overtakes it or runs out of fuel. If the fleet in pursuit loses sight of the destination fleet, it travels to the destination fleet's last known position.

### How to Pick a Fleet Out From a Crowd

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When two or more fleets are at the same location or close together, and you want to send another fleet to meet with one of them, do one of the following:

- ⇒ If the fleets are close together, zoom in using the plus (+) key until you can see everything clearly. Then set the waypoint on the fleet you wish to rendezvous with. Press the minus (-) key to zoom out.
- ⇒ If two fleets are in the same location and you wish to target one specifically, or target an opponent's fleet in orbit, click on the blue diamond in the [Fleet Waypoint tile](#), then select the destination fleet from the popup list.
- ⇒ If the goal is to refuel the destination fleet or join with the destination fleet then you can use the [Merge with Fleet waypoint task](#). This task requires that you specify the destination fleet as the waypoint.

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### Learn about

[Transferring Fuel and Cargo to other Ships](#)

[Jettisoning Cargo](#)

## Splitting and Merging Fleets

[More about Fleets](#)

[Playing Stars!](#)

### Splitting Fleets

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To split a fleet, click on the **Split** or **Split All** button in the [Fleet Composition tile](#). If you choose **Split**, the Ship Transfer dialog opens, allowing you to transfer any number of ships between the fleet under command and the fleet selected in the Other Fleets Here tile. If you choose **Split All**, all the ships in the fleet will divide into separate fleets based on ship design. You can also click on the **Merge** button in the [Other Fleets Here tile](#) to open the Ship Transfer dialog.

- ◆ The **Split** and **Split All** buttons are disabled when you reach 500 fleets.
- ◆ The **Split All** button will fail if the result will be more than 500 fleets.

### Merging Fleets

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To merge entire fleets with others, click on the **Merge** button in the [Fleet Composition tile](#). This opens the Merge Fleets dialog which allows you to merge any combination of fleets at the same location.

You can also merge fleets using the [Merge with Fleet waypoint task](#).

If you would like to transfer some but not all ships between the fleet under command and a selected fleet at the same location, click on the **Merge** button on the Other Fleets Here tile.

## Scrapping Fleets

[More about Fleets](#)

[Playing Stars!](#)

Scrap or destroy a fleet by merging it with a colony fleet or by choosing the [Scrap Fleet waypoint task](#). Scrapping allows you to regain a percentage of the minerals used in the ship's construction and all the mineral cargo on board. This is a good way to get rid of ships built using a hull design that is no longer useful. You can scrap fleets at any planet or even in deep space.

The construction minerals you recover are added to the minerals at the planet where the fleet is scrapped. The percentage of minerals recovered depends on the following circumstances:

- ◆ **Colonization mission** -- leaves 75% of the minerals used in construction on the surface of the planet.
- ◆ **Scrap Fleet at a starbase** -- leaves 80% of the minerals used in construction on the surface of the planet.
- ◆ **Scrap Fleet at any planet without a starbase** -- leaves 33% of the minerals used in construction on the surface of the planet.
- ◆ **Scrap Fleet in deep space** -- all construction minerals are lost.

### Ultimate Recycling Races

Races with the Ultimate Recycling trait recover 90% of the minerals and 70% of the resources when scrapping at a starbase. Scrapping at a planet gives 45% of the minerals and 35% of the resources.

## Feeding Scraps to other Players

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You can exchange technology with another player by scrapping a fleet at that player's planet. The other Player has the same chance of learning the technology as they would have if they'd met you in battle. They also get the recycled minerals.

## Reports on Your Fleets

[More about Fleets](#)

[Playing Stars!](#)

The Fleet Summary report shows where all your fleets are currently located, the orders that each is to follow at the next waypoint, the fuel supply, cargo, fleet composition, [cloaking percentage](#), and current mass.

- ⇒ Go to a fleet by clicking on either its Name, ID, Destination, Task, Battle Plan, or Mass.
- ⇒ Display the fleet's composition and any damage by clicking on its composition. If the composition is shown in red, one or more ships has taken damage. A + (plus) indicates that the fleet is composed of more than one ship type.
- ⇒ Transfer Fuel by clicking on the fleet's fuel supply.
- ⇒ Transfer Cargo by clicking on the fleet's cargo.

# Navigation

## [Playing Stars!](#)

You cause a fleet to move by assigning it one or more destinations or waypoints. You can assign a task at each waypoint, such as transport, attack, colonize, remote mine or scrap fleet. When fleets reach their last waypoint they stop.

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### **Read more about waypoints:**

[Adding Fleet Waypoints and Tasks](#)

[Moving Fleet Waypoints](#)

[Deleting Fleet Waypoints](#)

There are shortcuts through the Stars! universe in the form of stargates and wormholes.

### **Read about celestial shortcuts:**

[Stargate Navigation](#)

[Wormhole Navigation](#)



## Adding Fleet Waypoints and Tasks

[More about Navigation](#)

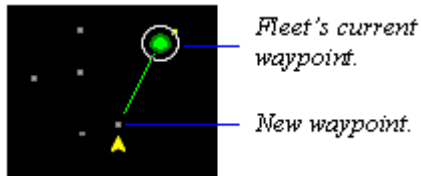
[Playing Stars!](#)

To add a fleet waypoints and a task to accomplish at that waypoint:

1. Select the fleet into the Command pane. Just double-click on its location in the Scanner, or right-click on it and choose the fleet from the popup list.

You can follow a fleet currently at your location by right-clicking on the diamond in the [Fleet Waypoints tile](#) and selecting that fleet from the list. This fleet appears as the waypoint.

2. SHIFT-click on the destination waypoint. This can be any planet, fleet or other object or point in space. A green line appears between your current location and the new waypoint.



3. Assign an appropriate task from the [Waypoint Task tile](#). If there's no work to be done at that waypoint, choose No Task Here from the dropdown list.

You can also right-click on the blue diamond in the Waypoint Task tile and choose an pre-defined Zip Order, or [create your own custom Zip Order](#).

4. Repeat steps 2 through 4 to add more waypoints.
5. If the fleet to continually repeat the entire series of tasks until it is interrupted, and if the final waypoint is the same as the starting waypoint, check **Repeat Orders** in the Waypoint Task tile.

## Notes and Tips

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### Distance and the Scanner "Grid"

When you set a waypoint, notice that the Scanner snaps to a "grid". The grid snap is one light year, and can't be redefined. Vertical or horizontal distance is measured in whole years. Diagonal distance between coordinates is a decimal amount slightly larger than one light year.

### Selecting One Object from Many at the Same Location

If there are multiple objects at the location, click on the blue diamond in the Fleet Waypoints tile and select the object you wish to make the waypoint.

### White Fleet Paths

The fleet path appears in white if two or more legs of the route are identical; for example, if you set a return path along the same route.

### Don't Choose the Same Waypoint Twice in a Row

You can't add two consecutive waypoints at the same location.

## **Moving Fleet Waypoints**

[More about Navigation](#)

[Playing Stars!](#)

If you want to move a waypoint from one place to another, move the cursor over the point you want to move, and the cursor will change to a hand. Click the mouse and the hand will close. Drag the mouse to the new destination. You will notice that the destination will snap to objects when you get close to them to help you avoid missing a planet. If you really want to set a waypoint really close to an object but not at the object, hold down on the SHIFT key while dragging in order to disable the snap-to-object behavior.

## Deleting Fleet Waypoints

[More about Navigation](#)

[Playing Stars!](#)

There are two ways to remove a waypoint:

- ⇒ Click on the waypoint you want to remove, then press either the Backspace or Delete key.
- ⇒ Click on the waypoint, then drag it to the next or previous waypoint and release.

## Stargate Navigation

[More about Navigation](#)

[Playing Stars!](#)

You must have a stargate at the source planet and at the destination planet. You can navigate using your stargates and Friend's stargates. Stargates have limitations both on the mass they can transfer and the distance the mass is transferred.

To send a fleet through a stargate:

1. If necessary, bring the fleet to the planet with the stargate. Make sure the fleet is carrying only Fuel. Cargo must be transferred to the planet or to another fleet before using the stargate.  
**Tip:** A stargate appears as a dark green dot in orbit.
2. Shift-click on the destination planet (which much also have a stargate), selecting it as the next waypoint.
3. Click in the Warp Speed gauge, dragging to the end of the gauge. The speed will change to **Use Stargate**. That's it. On the next turn, your fleet will appear at the destination planet, regardless of the distance traveled.

Use the Technology Browser to display statistics for each type of stargate. Just press F2 and select Orbital Devices from the dropdown list.

### **Range (how far fleets can jump safely)**

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This is determined by the range of the source stargate. If you aren't sure about the range of the source stargate, and the stargate you're using belongs to you:

1. Select the planet into the Command pane.
2. Drag your cursor over the Starbase tile.
3. Left-click on the tile, displaying the starbase schematic with the included stargate. The range is specified on the stargate.

If the source stargate belongs to a Friend, you'll need to ask them about the range.

You can exceed the normal range by up to five times the distance and possibly still arrive at the other gate. The fleet will, however, always take damage.

### **Mass Capacity**

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Each type of stargate has a maximum ship size limitation. Only ships that do not exceed the safe mass capacity of both the source or destination stargate will arrive safely.

You can exceed the acceptable mass capacity by up to five times the amount and possibly still arrive at the other gate. The ship will, however, always take damage.

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**Learn more about:**

[Stargates](#)

[Adding Waypoints](#)

[Transferring Cargo](#)

## Wormhole Navigation

[More about Navigation](#)

[Playing Stars!](#)

Wormholes are spacial anomalies that appear and disappear at whim. There are several types, some more stable than others. Wormholes offer you free travel across huge distances of space and have no mass limitations.

Wormholes appear only in deep space, being somewhat repelled by the gravity wells caused by a planet.

Wormhole stability ranges from Rock Solid to Very Unstable. Rock Solid wormholes can stay in one general area for 30 years or more. Very Unstable wormholes tend to move to a different area within about five years.

Each end of the wormhole moves independently. Due to their complex nature, wormholes "jiggle" a bit every year. Their exact location is always shifting.

- ⇒ To navigate a wormhole, select it as a waypoint. Your fleet will enter the wormhole as soon as it reaches the opening, and appear at the other end in the same year.
- ⇒ Clicking on a [wormhole in the Scanner](#) displays its destination (if known) and stability range in the [Selection Summary pane](#).

### **Detecting Wormholes**

Similar to a cloaked fleet, a wormhole is hard to see. To normal scanners, a wormhole will be less visible by 75%. Once you discover a wormhole it will no longer be cloaked to you.

# Colonization

## [Playing Stars!](#)

Colonize planets that are immediately habitable by you or that have a negative value but can be terraformed to become habitable. You should colonize as many planets as possible in order to increase the rate at which you gain [resources](#), which you need to build better technology and more fleets. At the same time, don't pull people off your home world so fast that you begin to lose significant resources. Try to find a balance between the planet's growth rate and the rate at which you send colonists off-planet.

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### **Read more about Colonization:**

[Choosing Planets to Colonize](#)

[Colonizing an Uninhabited Planet](#)

[Shuttling Colonists with Freighters](#)

[Hey, that Planet's Already Inhabited!](#)

## Choosing Planets to Colonize

[More about Colonization](#)

[Playing Stars!](#)

Planets come in three basic flavors:

- ◆ **Planets you can inhabit immediately.** These have a positive value, and appear green in Planet Value view in the scanner. The better the planet, the higher the value, and the larger the green dot. The higher the value, the faster your colony will grow.
- ◆ **Planets that have a negative value but can be terraformed by you.** These planets appear yellow in the Planet Value view. The larger the yellow dot, the better the planet will be after you finish terraforming.

Races based on the [Claim Adjuster trait](#) terraform automatically as soon as they land.

- ◆ **Planets that will just plain kill you.** These have a negative value, and appear red in Planet Value view. The bigger the red dot, the more deadly the planet. You don't have the ability to terraform these planets, although, if you can increase your level of terraforming technology, you may see that red dot change to yellow.

Two items in the selection summary pane can also help you determine which planets are good candidates for colonization:

**Habitability Value:** Two numbers will appear here if you have the technology to terraform the planet. The first number is the planet's current value. The second number (in parentheses), is the potential value of the planet if it were to be terraformed to the extent your current level of technology allows.

If you don't see the second number, you either can't terraform this planet or the selection summary pane has been narrowed too much for it to display.

**The Environment Graph:** Click on each of the three variables displayed in the environment graph. A popup will tell you the potential increase in planet value if you modify that variable to the limit defined by your current level of technology.

## Colonizing an Uninhabited Planet

[More about Colonization](#)

[Playing Stars!](#)

To colonize an uninhabited planet:

1. Fill the colony ship(s) with colonists and fuel.
2. Assign the new planet as a waypoint.
3. Set Colonize as a [waypoint task](#).

The colonists will dismantle the colony ship when they land, regaining any leftover fuel and cargo, and some of the minerals used in the ship construction, to start the colony.

It's usually a good idea to minimize the number of ships in the colonization fleet. You can always transport additional colonists using a freighter once the colony is established (colonists are unloaded, and the freighter proceeds to its next waypoint). If you have old, out-of-date ships you no longer have use for you can send them along on a colonization mission as a form of recycling (although ships may be scrapped at any time).



## Shuttling Colonists with Freighters

[More about Colonization](#)

[Playing Stars!](#)

Freighters can shuttle colonists to a planet that has already been colonized. If you're heading for a planet owned by an opponent, expect a fight, and be sure to carry enough colonists to overwhelm your foe. Use as many freighters as necessary, setting their orders to unload the colonists as soon as they reach the waypoint:

1. Specify orders for transporting colonists in the [Waypoint Task tile](#). For the waypoint where you'll load colonists, specify Transport as the action and Colonists as the cargo, then specify the amount you wish to load. You can also use the QuickLoad zip order or create your own custom zip order to do this.
2. At the waypoint or waypoints where you'll drop colonists, specify [Transport as the action](#) and Colonists as the cargo, then specify the amount you wish to unload. Be sure not to unload more colonists than the planet can support. You can also use the QuickDrop zip order or create your own custom zip order to do this.

### **Transporting Alternate Reality Colonists**

Alternate Reality races can take damage while traveling in space. Interstellar travel kills 3% of any colonists in the fleet per year.

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**Learn about:**

[Creating Custom Transport Zip Orders](#)

## **Hey, that Planet's Already Inhabited!**

[More about Colonization](#)

[Playing Stars!](#)

You can't colonize a planet that's already inhabited. Colonizing means to make an uninhabited planet your own. If you transfer the colonists using Transport orders, you'll automatically initiate ground combat with the current inhabitants. At this point your colonists become ground troops. If more than one player lands ground troops on the planet during the same year/turn, everyone will fight until only one side is left.

You cannot invade any planet that has a starbase in orbit. This means you'll need to destroy any starbase with your war armada before you can beam down.

### **Alternate Reality Races and Invasion**

Since Alternate Reality races inhabit starbases and not planets, destroying their starbase makes the planet open for colonization. Alternate Reality races also cannot invade other player's worlds.

# Mining

## [Playing Stars!](#)

Most of a planet's minerals lay under the surface, unavailable for use until your colonists mine them. You can build mines on your own worlds, or use robot miners to mine uninhabited worlds.

The mineral content of a planet is shown in the [Selection Summary pane](#) and the [Minerals on Hand tile](#). The number of mines that have been built and that can be operated also appear in the Minerals on Hand tile.

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### **Read more about Mining:**

[Mining Colonized Worlds](#)

[Remote Mining](#)

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### **Read about Mines:**

[Mines, Mineral Concentration and Player Efficiency](#)

## Mining Colonized Worlds

[More about Mining](#)

[Playing Stars!](#)

To build a mine, just add it to the production queue. You can do this manually or by using the [auto-build feature of the Production dialog](#). These mines will be built, and the minerals within will be mined and made available immediately to the locals.

### **Alternate Reality Race and Mining Colonized Worlds**

Since [Alternate Reality races](#) live on starbases and can only perform a small amount of innate mining, they must remote mine their own worlds.

To determine how much more of a mineral a new mine will produce:

1. Turn to page 5 of the View Race dialog and see how efficient your race is at building and using mines and factories. Cancel the dialog when you've finished.
2. Look at the [mineral concentration information in the Selection Summary pane](#) and the [Minerals on Hand tile](#). Click on the mineral name or value in either of these locations to display information on the density of each mineral under the surface.
3. Calculate productivity using this formula:

**(potential productivity)(mineral concentration) = (actual productivity)**

For example, you learn from the View Race dialog that 10 mines produce up to 10 kT per year and from the [Mineral Content graph in the Selection Summary](#) that mineral concentration is 50 percent. Then 100 mines will produce 50 kT of each mineral in the next year. In this case, you would have to add two mines for every 1 additional kT of each mineral you want each year.

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**Read more about Mines:**

[Mines, Mineral Concentration and Player Efficiency](#)

## Remote Mining

[More about Mining](#)

[Playing Stars!](#)

Remote mining is the use of robot miners to remove minerals from uninhabited planets for transfer to your needy, inhabited worlds. You can only perform remote mining on uninhabited worlds, using mining ships that carry robot mining modules. You need to research the technology to create both the hulls and the modules, then design the ships using a miner hull. Place mining modules in the Mining slots when you design the hull. When you're ready to mine, add Mining ships to your production queue.

### **Alternate Reality Race and Mining Colonized Worlds**

Since [Alternate Reality races](#) live on starbases, they must remote mine their own worlds.

Remote mining fleets actively engaged in mining report annually on the planet's environment and mineral situation. These ships do not need scanners, unless you want them to be able to detect enemy fleets as well.

Use the Technology Browser (press F2) to learn the research and production requirements for remote miners: look in the Hulls category for the miner hulls, and in the Mining category for the modules.

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### **Read more about:**

[Creating a Robot Mining Fleet](#)

[Joint Ventures in Remote Mining](#)

## Creating a Robot Mining Fleet

[More about Mining](#)

[Playing Stars!](#)

Robot miners can't carry much fuel, which means they won't go far by themselves. To assemble and launch a robot mining fleet:

1. Merge your mining ships into a fleet with at least one freighter. The freighter typically will be able to carry enough fuel for the fleet to reach its destination.
2. Assign the planet to be mined as the waypoint, with orders to carry out remote mining.
3. When the fleet reaches the planet to be mined, split the miners and freighters back into separate fleets.
4. Select the freighter fleet and assign a circuitous route with waypoints at the planet(s) to receive the minerals, ending with the mining fleet as the last waypoint. At the mining fleet waypoint assign a transport order that causes the minerals to be loaded from the miner to the freighter in the most optimum way possible.

When you set the mining fleet as the waypoint instead of the planet the mining fleet is orbiting, the freighter will automatically follow the mining fleet wherever you send it.

## **Joint Ventures in Remote Mining**

[More about Mining](#)

[Playing Stars!](#)

You can join with other players to remote mine a planet, each player using their own remote mining fleet and freighters or, since minerals can be transferred between different players fleets and planets, one player may mine then manually transfer the minerals to the other player's holds for transports to the agreed upon ports-o-call. Any [Super Stealth race](#) can set up transferring cargo from a mining fleet as a waypoint task.

# Transporting Freight

## [Playing Stars!](#)

You can transport minerals, fuel and colonists from waypoint to waypoint. These waypoints can be either planets or fleets. Freight is either carried in ships that have cargo holds or modules, or flung across space using mass drivers. For a description of different cargo modules and mass drivers, refer to the Technology Browser (press F2).

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### **Read about these Freight topics:**

[Shipping Freight](#)

[Transferring Fuel and Cargo to other Fleets](#)

[Jettisoning Cargo](#)

[Creating a Custom Transport Zip Order](#)

[Flinging Mineral Packets](#)

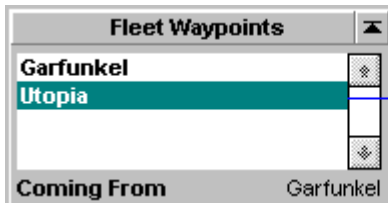


## Shipping Freight

[More Transport Topics](#)  
[Playing Stars!](#)

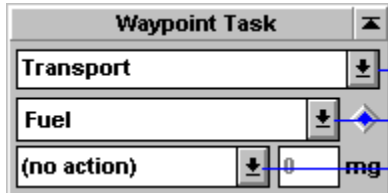
To get the transport process started:

1. Select the fleet that will carry the cargo.
2. Add a waypoint or series of waypoints in the Scanner pane.
3. In the [Fleet Waypoints tile](#), click on the waypoint name.



*Choose the waypoint where you'll load or unload the cargo.*

4. In the [Waypoint Task tile](#), specify the Transport orders:



*Select Transport as the task.*

*Select a cargo.*

*Select a load or unload action*

For a description of each action, read about [the Transport task](#).

### Zip Orders

You can also use Zip Orders to speed things up a bit. Just right-click on the blue diamond in the Waypoint Task tile and select one of the sets of orders listed. Left-click on the diamond for a description of the pre-defined orders. You can also [create your own custom Zip Orders](#).

Repeat this process for each waypoint where you'll load or unload freight.

## Repeat Orders

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If you want to set up the fleet to endlessly follow a route until you specify otherwise, check the **Repeat Orders** box in the Fleet Waypoints tile. If you want the fleet to return to its planet of origin as part of the route, be sure to specify that planet again as a waypoint.

Remember that you can specify another fleet as a waypoint. For example, if you want to set up a route between a remote mining fleet and one of your mineral-needy production planets, specify the mining fleet as the first waypoint and the production planet as the second waypoint. At the first waypoint, the mining fleet, set Transport orders for each mineral you plan to load, specifying QuikLoad using the Zip Orders diamond. At the second waypoint, specify the QuikDrop Transport Zip Order for each type mineral you load from the miner.

If you want to set up regular transport routes and you're playing a large universe, consider using fleet routing to send your ships from planet to planet.

### Learn about:

[Routing Fleets](#)

## Transferring Fuel and Cargo to other Fleets

[More Transport Topics](#)

[Playing Stars!](#)

Fuel and minerals can be transferred between fleets. These fleets can belong to you or an opponent. Once given, the fuel or cargo can not be taken back. This opens up possibilities for trade (as part of a [diplomatic strategy](#)).

Fuel and minerals can also be transferred from any player's fleet to any player's planet. However, if one player attempts to transfer colonists to another player's planet (regardless of their relationship), that's called an [invasion](#), and dealt with in the expected manner.

Transfer cargo using one of the [cargo transfer dialogs](#). These are accessible from several tiles in the [Command pane](#).

## Jettisoning Cargo

[More Transport Topics](#)

[Playing Stars!](#)



As indicated by the Location tile shown here, you must be in deep space to jettison cargo. Do this if you don't have enough fuel, must reach your destination or make a fast getaway, and can't wait for another ship to reach you with fuel.

Transferring cargo to an opponent's ship or a planet you don't own effectively does the same thing: you lose the cargo.

Jettisoned cargo is lost to the cosmos.

## Creating a Custom Transport Zip Order

[More Transport Topics](#)

[Playing Stars!](#)

A Zip Order is a common Transport order you wish to specify many times in a game, just by selecting the Zip Order name. Stars! provides four pre-defined Zip Orders (including Clear). You can't change the pre-defined orders, but you can add up to four custom zip orders.

Once you create a Custom Zip Order, it's available in all your games until you delete it. Here's how to create one:

1. Specify the Transport order in the [Waypoint Task tile](#).
2. Set up the order you wish to add to the Zip Order list by selecting the appropriate cargo items and operations.
3. Right-click on the blue diamond in the Waypoint Task tile.
4. Select **<Customize>** from the popup menu. The [Custom Zip Orders dialog](#) appears.
5. Select a Custom Order slot in the dialog.
6. Click on **Import**. This copies in the current transport orders from the Waypoint Task tile. The Rename Zip Order dialog appears.
7. Type the name, and **OK** the dialog. The new order appears in the Custom Order dialog.
8. **OK** the Custom Order dialog.
9. Right-click on the blue diamond again. Your custom Zip Order appears in the popup.

## Editing a Custom Zip Order

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- ⇒ Repeat steps 1 - 5 above, and in step 5, select the order you wish to modify.
- ⇒ Click on **Import** and **OK** the Rename Zip Order dialog.

## Flinging Mineral Packets

[More Transport Topics](#)

[Playing Stars!](#)

Flinging a mineral packet is a two step process:

### Target the Mass Driver

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This must be done before you build the packets, or the packets will disintegrate. Of course, you must also have a mass driver on the planet's starbase.

1. Click on the **Set Dest** button on the [Starbase tile](#).
2. Select a target by left-clicking on the target planet in the Scanner. The Scanner displays the path as a purple line.

⇒ You can also target a Mass Driver by SHIFT-clicking on the destination planet.

For the packet to arrive safely, the target must also have a driver of equal or greater capacity. If the planet has a lesser mass driver, or no driver at all, the packet will destroy some or all of the colonists and installations on the planet surface. On both inhabited and uninhabited planets, 2/3 of the minerals in the packet will be lost in the collision.

### Build and Fling the Packets

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You build packets using the [Production dialog](#). The packets are automatically flung as soon as they're built.

1. Target the mass driver, if you haven't already.
2. Choose the packet speed. Slower speeds allow you to fling packets to planets with lesser mass drivers (meaning you want the planet to "catch" the packet. Higher speeds (above the rated speed) are unstable but get there quicker and do more damage.
3. Click on **Change** in the [Production tile](#), opening the Production dialog.
4. Look at the production inventory. It contains a packet type for each mineral and a mixed packet that contains all three minerals. When you click on a packet type in the inventory the numbers below the inventory show how many kT of each mineral is required to build the packet. The inventory will also include an auto-build item for sending mineral packets.
5. Select the packets you want to build/send, then **Add** them to the queue. Fling packets automatically by adding the Auto Build Mineral Packets item to the queue. Your planet will build and fling packets until you remove the item from the queue.

The packets are flung as soon as they are built.

The [Messages pane](#) informs you each time a packet is sent. Mineral packets in scanner range appear in the Scanner as a green square if they belong to you or a red square if they belong to an opponent.

You can't attack mineral packets. You can intercept them and use the [Other Fleets Here tile](#) to transfer their contents to your fleet.

### Displaying any Packet's Destination

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When you click on any mineral packet in the Scanner, its destination is displayed in the Summary pane.

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**Learn more about:**

[Mass Driver Basics](#)

[The Guts of Mass Drivers](#)

[Adding Auto-Build Items to the Queue](#)



## The Basics of Combat

### [Playing Stars!](#)

Here's how to create and specify battle plans, initiate all types of combat, and watch a replay of a battle in space. In general, all you need to know about the outcome of a battle is described in the message you receive. If you lose a battle and don't know why or just want to compare your tactics to those of your enemies you can watch a replay of the battle in the battle VCR.

### **Turn-based versus Real-time Battles**

Because Stars! is a turn-based game, there is no way for you to directly control your battles as they happen. The play here is in the strategy, not the joysticking. Use the VCR to learn how the enemy attacks, and how your attack was successful or failed.

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### **Read more about the basics of combat:**

[Fleet-to-Fleet Combat](#)

[Salvage from Space Battles](#)

[Bombing Planets](#)

[Mineral Packet Bombardment](#)

[Ground Combat](#)

[Minefields](#)

[Starbase Combat](#)

[Declaring Friends and Enemies](#)

[Battle Plans](#)

[Battle Reports](#)

[Replaying a Space Battle](#)

[Viewing Enemy Fleets](#)

[Viewing Enemy Ship Designs](#)

[Fleet Reports on Enemies and other Players](#)

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### **Read about the technical details of battle:**

[The Guts of Combat.](#)

## Fleet-to-fleet Combat

[More about Combat](#)

[Playing Stars!](#)

To attack an opponent's fleet, do the following:

1. Choose your fleet's battle plan from the dropdown in the [Fleet Composition tile](#). To open the Battle Plans dialog and learn the contents of a plan, or change or create a plan, choose **Battle Plans...** in the dropdown.
2. Set a waypoint at the enemy fleet. If the enemy fleet is in orbit of a planet, you may want to explicitly target the fleet so you'll chase it if it leaves the planet. Just right-click on the blue diamond in the Fleet Waypoints tile and choose the enemy fleet from the list that displays.

Your fleet will either reach the enemy and engage them, or, if you're tackling another fleet, you'll chase them until you break off pursuit. If you do attack, you receive a message the following year describing the outcome of the battle. If you wish you can replay the battle [using the Battle VCR](#). If you lose track of the enemy you'll receive a message saying that your fleet's waypoint has been set to their last known location. When you receive a message about a battle the **Goto** button in the messages pane will select the location of the battle in the Scanner pane and the text of the button will change to View. Pressing **View** displays the Battle VCR, allowing you to watch a reconstruction of the battle. Use the VCR to learn how the enemy attacks, and how your attack was successful or failed.

The outcome is determined by the battle plans and ship components used by your and your opponent(s).

To learn about specific weapons, armor, shields and engines, study the Technology Browser (press F2). To learn how to research and design your offensive technology, read about how to perform research or how to use the Research dialog; then read about ship design.

### **Battle Orders don't Interfere with Waypoint Tasks**

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By default, new armed fleets start out with attack orders. Since these orders are always in effect, your armed fleets can also be assigned any waypoint task suitable for that fleet.

### **Firing in Passing**

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If a ship moves in the direction of its primary target but is still out of range, it will try and fire on any target within range. The [primary target](#) is specified in the Battle Plans dialog.



## Salvage from Space Battles

[More about Combat](#)

[Playing Stars!](#)

Ships destroyed in battle or by minefields leave salvage. Cargo is dumped in space as a mineral packet or, if the battle took place in orbit, the cargo falls to the surface of the planet. Players who survive a battle against technologically superior ships have up to a 50% chance of automatically advancing one level in one field of technology. The technology bonus is based on sensor readings rather than salvage. In order to recover the minerals from a salvage packet for use in production:

1. Travel to the location of the salvage packets.
2. Choose the packets from the [Other Fleets Here tile](#) dropdown.
3. Click on the **Cargo** button, then use Cargo Transfer dialog to empty the packets into the holds of your fleet.

## Bombing Planets

[More about Combat](#)

[Playing Stars!](#)

Bombing happens automatically. All you need to do is load your bombers and send them to the enemy planet. If the planet does not have a starbase, the fleet begins to bomb on arrival. (If the planet has a starbase, you'll have to destroy it before you can commence bombing.)

You specify the type of bombs a particular bomber design carries when you design the ship. Your bombers have an infinite number of bombs, allowing your fleet to bomb forever without resupplying. The number of bombs you place in each slot is the number dropped on that planet per year.

## Enemy Population Count During Bombing

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You may notice that the enemy population reduction doesn't always match your calculations when bombing. For example, the Summary pane reports that the population is 400,000. You receive a report saying your bombs destroyed 65,000 colonists. Now the Summary pane says the population is 410,000. What gives?

The population report of an opponent's world is always an estimate. The number shown is +/- 20% of the actual value. Since you aren't on the surface, you won't be able to take an accurate count -- until the count is zero.

## Special Bombs

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[Claim Adjuster races](#) can gain the Retro bomb, a type of terraforming weapon used to return the planet to its original conditions.

Smart Bombs destroy colonists, but not Mines or Factories. They are twice as effective at penetrating planetary defenses.

For information on bomb types and damage, take a peek at the Bombs category of the Technology Browser. To learn how to research bomber and bomb technology, read about [how to perform research](#) or use the Research dialog. To learn how to design and build bombers, [read about ship design](#).

## **Mineral Packet Bombardment**

[More about Combat](#)

[Playing Stars!](#)

If your starbase has a mass driver, you can fling mineral packets against planets with no mass driver or a lesser mass driver. This will destroy colonists and installations, and is cheaper than building and sending bombers (as long as you can afford to throw away the minerals). A warp 13 mineral packet is as close as Stars! comes to a doomsday weapon.

You can defend against this type of attack by building a mass driver to catch the packets. If the sending driver is more powerful, you'll at least slow the packets down and reduce the damage. The next best thing is to have good planetary defenses. (These are described in the Planetary section of the Technology Browser.) If you're fast enough you may be able to intercept the packets in flight (assuming it will take the packet more than one year to reach its destination) and transfer their load into your cargo holds.

Packets targeting your world send you a warning message if your scanners can spot them in time.

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### **Read more about Mass Drivers:**

[The Guts of Mass Drivers](#)

[Mass Driver Basics](#)

[Flinging Mineral Packets](#)

## Ground Combat

[More about Combat](#)

[Playing Stars!](#)

To invade another player's planet and initiate ground combat:

1. Build a fleet with one or more freighters.
2. In the [Waypoint Task tile](#), use the Transport task to load colonists onto the fleet. Try to load what you think will be an overwhelming number.
3. Set a waypoint to your opponent's planet.
4. Use the Transport task to drop all colonists at the new waypoint.

If the planet has a starbase, you'll have to destroy it before you can transfer your troops to the surface.

You'll lose some of your colonist troops when you transport them through the planetary defenses. Planetary defenses are 75% effective against enemy colonist drops. Your troops that make it to the surface and your opponent's colonists fight until only one side remains. If everyone is killed, the planet is up for grabs to the first player who colonizes it. Such planets must be recolonized using a colonization fleet.

Capturing a planet in this way allows you to keep any surviving mines and factories.

If the planet is not habitable by your colonists, have the fleet load all of them up the next year. This prevents you from losing colonists to the elements.

If you plan to use ground combat extensively, consider creating a race that has the [primary trait of War Monger](#) before you start the game.

You cannot invade any planet that has a starbase in orbit. This means you'll need to destroy any starbase with your battle ships before you can beam down.

### **Alternate Reality Races and Invasion**

Since [Alternate Reality races](#) inhabit starbases and not planets, destroying their starbase makes the planet open for colonization. Alternate Reality races also cannot invade other player's worlds.

## Minefields

[More about Combat](#)

[Playing Stars!](#)

You can string minefields around your planet or anywhere else in the universe. Minefields are typically a defensive strategy. However, they can also be used as a last-ditch offensive weapon by remotely detonating them (preferably when they enclose enemy fleets) if you have the [Space Demolition primary trait](#). They require the use of ships that carry mine layers.

### Players Affected by Minefields

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Mines are not set off by fleets belonging to you or your friends. Only neutral and enemy fleets will have trouble navigating the field.

#### **Cloaks and Minefields**

Cloaks do not protect ships from mines. Minesweepers may be cloaked if you wish to disguise minesweeping activity for as long as possible.

### Minefields in the Scanner

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To view minefields, use the [Scanner pane's Mine Fields overlay](#). Minefields are displayed in the Scanner as circular grids, blue for your minefields, yellow for people you've declared as friends, red for your enemies. Only those minefields within scanner range will appear. A mine field is 75% cloaked if you haven't seen it before. Minefields are always cloaked 75% from non-penetrating scanners.

You can see both the center and radius of another player's minefield under these circumstances:

- ◆ The center of the minefield is in range of your penetrating scanner, OR
- ◆ You have hit the minefield at least once and the center is in range of your normal scanners. OR
- ◆ You are currently IN the mine field.

#### **Minefields as Scanners**

Minefields act as normal scanners for players with the primary trait of [Space Demolition](#). These scanners do not detect fleets orbiting planets.

---

### Read more about Minefields:

[Laying Minefields](#)

[Sweeping Minefields](#)

[Remotely Detonating Minefields](#)

[The Guts of Minefields](#)

## Laying Minefields

[More about Minefields](#)

[More about Combat](#)

Only a ship with a mine layer can lay minefields. Mine layers are described in the Mine Layers section of the Technology Browser. You'll need to research Energy and Biotechnology for mines that explode, and Propulsion and Biology for those sticky Speed Trap mines. Once you've gained the technology, use the ship designer to add mine layers to a ship hull. Build the ship and you're ready to go.

To lay a minefield:

1. [Select the fleet](#), bringing it into the Command pane.
2. Click in the [Scanner](#), selecting the target planet or point in space as the waypoint.
3. If necessary, click in the Warp Factor gauge in the [Fleet Waypoints tile](#), and adjust the warp speed.
4. In the [Waypoint Task tile](#), click on the dropdown and select **Lay Mine Fields**.
5. Specify the number of years to lay mines.

The Waypoint task tile notes how many mines that fleet can lay per year. Stars! supports laying up to 1,000,000 mines in a field, at a rate of more than 32,000 mines a year.

## Minefield Coverage

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Use the Scanner's [Mine Fields overlay](#) to show the area of space covered by the field. Click on the field to display the mine type, field size and decay rate in the [Selection Summary pane](#).

## Minefield Decay

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Minefields decay at a rate of 2% a year for most races. If you belong to the Space Demolition Race, your mine fields will decay at a rate of 1% a year. In either case, you should plan to replenish the fields as needed. (If enemy or neutral ships thin them out, you'll need to rebuild as well.) Mine fields decay an additional 4% a year for each planet they contain. The maximum decay rate for a mine field is 50%.

**Learn how to:**

[Design Ships](#)

[Select an Object to Command](#)

[Add a Waypoint and Waypoint Task](#)

## Sweeping Minefields

[More about Minefields](#)

[More about Combat](#)

Ships and Starbases with beam weapons can sweep minefields. You can only sweep minefields belonging to Neutrals and Enemies. Sweeping minefields happens automatically. If you're flying through a neutral or enemy minefield and your fleet carries beam weapons with a range of 1 or greater, you'll start clearing a path. If an opponent builds a minefield around your planet and your starbase has beam weapons, the starbase will start clearing space to the limits of its weapons.

Sweeping mines happens before movement, so a fleet in a minefield sweeps mines the year it moves out of the field.

To display minefields you know about, turn on the Scanner pane's [Mine Fields overlay](#).

## Calculating a Fleet's Mine Sweeping Capability

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To determine how many mines a beam weapon can sweep each year, multiply the weapon's Power by the square of its Range. Add up all the beams in the fleet and you know how many mines you'll sweep each year. If the fleet is in more than one mine field, it sweeps this number simultaneously from each mine field.

Gatling weapons are even more effective at sweeping mine fields. Consult the Technology Browser to learn their exact level of effectiveness.

Speed trap mines are swept at only 1/3 the normal rate.

Look in the Beam Weapons section of the Technology Browser to learn the power and range of each beam weapon.

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### Learn how to:

[Select an Object to Command](#)

[Add a Waypoint and Waypoint Task](#)

## Remotely Detonating Minefields

[More about Minefields](#)

[More about Combat](#)

You must be playing a [Space Demolition race](#) to remotely detonate your minefields. You can detonate only minefields made of Standard Mines. Once set to blow, the field will detonate at the END of the next turn.

To remotely detonate a minefield:

1. Select the minefield in the scanner. If more than one object is present, right-click on the field and select it from the popup list.

A summary of the field appears in the Selection Summary pane.

2. Check **Detonate Mine Field Next Year** in the Summary pane.

ALL ships in the field take damage as if they hit a mine.



## Starbase Combat

[More about Combat](#)

[Playing Stars!](#)

Starbases take part in combat. They don't move but have an [initiative](#) of 10 - 18. They are separate from the planet and any fleets, and thus must be targeted separately.

A planet cannot be bombed or invaded if it is orbited by a starbase. A starbase can be designated as the primary target using the [Battle Plans dialog](#). It can be selected as the only primary target, and is also included when you select Armed Ships as a primary target.

## Declaring Enemies and Friends

[More about Combat](#)

[Playing Stars!](#)

In a single player game, everyone is your enemy. In a multi-player game, you designate who you do and don't wish to attack.

⇒ Select **Player Relations** from the **Commands** menu to specify your enemies, your friends, and races you have no feelings for whatsoever (neutral).

When you give a fleet attack orders you can choose who to attack: all enemies, all neutrals and enemies, everybody or a just a specific opponent.

Friends are also immune to your mine fields, automatically refuel at your starbases and are allowed to use your stargates.

Fleets with the waypoint task of Patrol will only attack Enemies.

## Unwilling Participants and Innocent Bystanders

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If you declare another player to be your friend you may be unexpectedly drawn into battles. If a friend of yours is attacked and you have a fleet at the same location your fleet will automatically join the battle even if it does not have attack orders. Yegads.

If both players are your friends, you can sit on the sidelines and watch or be on your merry way. Same thing if both players are your enemies.

## Battle Plans

[More about Combat](#)

[Playing Stars!](#)

Battle plans specify the behavior of your ships in a confrontation. When you specify attack orders, you choose a battle plan that defines the attack and defense. Modify or delete an existing plan or create a new plan using the Battle Plans command (in the Commands menu).

All new ships start out with the Default battle plan. Battle plans for a fleet are selected in the [Fleet Composition tile](#), and are in effect regardless of the fleet's waypoint task.

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### Read more about Battle Plans:

[Targeting](#)

[Battle Tactics](#)

[Making a New Battle Plan](#)

[Changing the Contents of a Battle Plan](#)

## Targeting

[Battle Plan Topics](#)

[General Combat Topics](#)

For each attacking token, or group of ships of the same design in a fleet, and each [round of battle](#), Stars! tries to pick the right target from all the other tokens in the battle. Each potential target is compared with the primary target type; for example; Any, Starbase, or Armed Ships. If no target is found, Stars! looks for targets matching the secondary target type, attacking the first matching target found. If no target is found, the attacking token disengages.

Cloaked tokens are targeted the same as all other tokens.

When picking targets, Stars! tries to avoid targeting tokens already targeted by another ship.

## Starbases

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Starbases use a primary target of Armed Ships and a secondary target of Any.

## Targeting Examples

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### **Primary target: Bombers/Freighters; Secondary target: Fuel Transports**

Any enemy bombers and freighters are targeted first. Once they are gone, the attacker looks for and tries to destroy enemy Fuel Transports. This tactic is useful for crippling enemy battle groups while attempting to avoid their heavy guns.

### **Primary target: Armed Ships; Secondary target: None/Disengage**

This would try to take out all enemy armed ships and the armed enemy starbase, leaving unarmed ships alone. This is useful if you plan on stealing cargo from the unarmed ships (assuming you survive).

### **Primary target: Armed Ships; Secondary target: Bombers/Freighters**

This ignores anything that isn't armed, or a bomber or freighter. This prevents you from wasting shots on harmless ships.

## **Battle Tactics**

[Battle Plan Topics](#)

[General Combat Topics](#)

A fleet's battle plan lists a tactic for each general target type: Any, Armed Ships, Starbase, etc. Tactics fall into three styles: disengage, minimize personal damage, and maximize opponent damage. Each tactic determines how much damage each token, or group of ships of the same design, in your fleet will attempt to both inflict and expose itself to.

In all cases except Disengage the token will attempt to get closer to the target if it is currently outside maximum range. If the token runs out of primary and secondary targets it will automatically switch to Disengage. If a token can no longer do any damage it will automatically Disengage. For example if the attacking token has shield buster weapons only and none of the enemy tokens have shields, the attacker will disengage.

## Making a New Battle Plan

[Battle Plan Topics](#)

[General Combat Topics](#)

1. Select an existing battle plan from the **Plan** dropdown.
2. Click on the **Copy** button to copy an existing plan. If the list is full (14 plans), select an existing plan you are willing to replace.
3. In the **Primary Target** dropdown, select a primary target for the fleet to attack.
4. Select a **Secondary Target**.
5. Select a **Tactic**.
6. In a multi-player game you can choose **Who to attack**. In games with only computer opponents all other players are your enemies.
7. Click on the **Rename** button and type in a new name.
8. Click on **OK**. The new plan will appear in the Waypoint Tasks tile the next time you choose an Attack task.

## Changing the Contents of a Battle Plan

[Battle Plan Topics](#)

[General Combat Topics](#)

You may find that your battle plans need fine tuning over time. Here's how to change one:

1. Select an existing battle plan from the **Plan** dropdown.
2. Click in the Primary **Target** dropdown and select a target type.
3. Choose a **Secondary Target** for your ship to attack if the primary target type is not present.
4. Choose a **Tactic**.
5. In a multi-player game you can choose **Who** to attack.
6. When you finish, **OK** the dialog. Your changes take affect that turn.

## Battle Reports

[More about Combat](#)

[Playing Stars!](#)

Use this report to view statistics for each battle that took place the previous turn, and to view the battles themselves. Each line in the report summarizes one battle that occurred the previous year.

- ⇒ Select the battle's location in the scanner by clicking once anywhere on the battle summary.
- ⇒ To review the battle in the VCR and learn the gory details, click again on that battle's summary.

The Battle Summary report shows the following:

**Location** Coordinates or planet name where the battle took place

**SB** -- Starbase involved (O = ours, T = theirs),

**Sides** -- number of players that fought

**Units** -- the total number ships involved, including any starbase

**Ours** -- total number of our ships involved, including any starbase

**Theirs** total number of our ships and their ships involved, including any starbase

**Unarmed, Scout, Warship, Bomber, Utility** total number of each [ship class](#) involved in the battle

**Our Dead** -- total number of our ships that were destroyed

**Their Dead** -- total number of their ships that were destroyed



## Review a Space Battle

[More about Combat](#)

[Playing Stars!](#)

After a while you will find that there is no need to view most battles. There are times, however, when you were sure that you had overwhelming forces and still got your rear kicked. That's where the [Battle VCR](#) comes in to play. It is a great place to learn about the characteristics of your opponents' fleets and to determine your opponents' battle strategy.

You start the VCR from the [Messages pane](#). When a battle has taken place, you receive a message summarizing the event. If you click the **Goto** button, the scanner selection moves to the location of the battle and the button turns to **View**. If you click on **View**, the VCR appears.

You can also open the Battle VCR from the [Battle Summary report](#). Just double click on the battle summary in the report.

## Viewing an Enemy Fleet Summary

[More about Combat](#)

[Playing Stars!](#)

To learn about an opponent's fleet that appears in the Scanner pane:

- ⇒ If your opponent's fleet is in space, left-click on the fleet symbol. If there is more than one fleet at the location, right-click and select the enemy from the popup list.
- ⇒ If your opponent's fleet is orbiting a planet, right-click on the planet, then select the fleet from the popup list.

The fleet appears in the [Selection Summary pane](#). The number of ship types in the fleet are indicated by the ship in the picture in the Summary pane and the total number of plus (+) symbols in the corners of the ship picture. Display the fleet's composition by clicking on the picture in the Summary pane. Right click on the picture to display the hull layout of the primary ship.

**Tip:** If the enemy fleet is in orbit, you can also click on the planet, then click on the [yellow arrow in the Summary pane](#) until the fleet's summary is displayed.

## Viewing Enemy Ship Designs

[More about Combat](#)

[Playing Stars!](#)

Any ships you have fought can be examined in the [Ship Designer dialog](#). Select **Enemy Hulls**, then select the design you want to view.

Ships you have not seen in battle will have no details other than the hull type. If you have fought the ship type before the dialog displays full details, including armor and shield strengths.

## Fleet Report on Enemies and other Players

[More about Combat](#)

[Playing Stars!](#)

To display intelligence reports about other player's fleets, choose **Other's Fleets** from the **Reports** menu (or press F3 three times). The report can be sorted by any of its fields.

⇒ Display enemy fleets in the [Selection Summary pane](#) and in the [Scanner](#), following in the report's sort order, by using the '[' and ']' keys (left and right brackets) while the report is active. In the report, the fleet displayed in the Summary pane is highlighted.

This report shows where these fleets are currently located, their speed, fleet composition, and breakdown by [ship class](#). A + (plus) in the Composition indicates more than one ship type is present in the fleet.

## Patrolling

### [Playing Stars!](#)

While on Patrol, your fleet will automatically intercept and attack any incoming enemy fleets within a specified range. Fleets on patrol will not target neutrals or friends.

### **Assigning Patrol Orders**

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To place a fleet on patrol duty:

1. Give the fleet one waypoint in the scanner.
  2. In the Waypoints Task tile, select the [Patrol task](#).
  3. Select an Intercept Range. Your fleet will only attempt to intercept enemy fleets it detects within the specified range.
  4. Set the intercept speed using the warp factor gauge, or accept the default of Automatic. The default chooses the optimum speed (attempting a speed that uses the least amount of fuel to intercept in the shortest possible time). You will be notified when a patrolling fleet is given a new target and can adjust the warp speed or retarget it before the intercept happens.
  5. Set any additional waypoints. The Patrol order will be carried out automatically for each waypoint, until you assign a different task.
- ⇒ To station a patrol at a particular location, send the fleet to that location and then give it the Patrol task and check the Repeat Orders checkbox. The fleet will only target enemies within its Intercept Range from that point and will automatically return there after the intercept.

### **Patrol Targets Enemies Only**

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Fleets on patrol will only intercept and attack Enemy fleets. In a single player game against AIs, all other players are your enemies. In a multi-player game, you can choose who is your enemy, friend or a neutral.

To make a player your enemy in a multi-player game:

1. Choose **Commands (Player Relations)**, opening the [Player Relations dialog](#).
2. Select the player in the dropdown list, then click on **Enemy**.
3. **OK** the dialog.

Patrol does not immediately target an enemy fleet. Targeting occurs after all players move, as one of the last tasks in generating a new turn. This allows you to receive a message and inspect the patrol order that was given, altering it if necessary before the ship commits to the attack.

If you want the ship to patrol and attack a particular enemy fleet you see right now, simply add a waypoint at the enemy fleet with orders to Patrol at that ship.

### **Patrol and Battle Plans**

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Patrol takes battle plans into account when deciding who to intercept. Your primary target will be matched according to its hull type. For example, if you target unarmed ships, your patrol fleet will only target fleets guaranteed to be unarmed. You would not target a battleship, even if you've fought it before and know that it doesn't have any weapons on board.

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**Learn more about:**

[Battle Plans](#)

# Scanning and Cloaking

## [Playing Stars!](#)

Scanners tell you about:

- ◆ planetary environments
- ◆ enemy fleets
- ◆ minefields
- ◆ mineral packets in transit
- ◆ salvage
- ◆ wormholes

Both planets and ships can have scanners. You create a planet-based scanner by adding it to your production queue. Ship-based scanners must be included in the hull design.

All fleets detected by your scanners appear in the [Scanner](#). Fleets can use cloaking devices to reduce a scanner's range and thus increase the chances of escaping detection. You can display your scanner coverage at different levels and determine any weak areas using the [Scanner pane's Radar Overlay](#).

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### **Read more about Scanning:**

[Scanner Technology](#)

[Selecting Fleets in the Scanner pane](#)

[Scanning Planets](#)

[Cloaking Fleets](#)

[Detecting an Opponent's Fleets](#)

[Pirating using Stealth-based Scanners](#)

## Scanner Technology

[More about Scanning](#)

[Playing Stars!](#)

Like all other technology, the science behind scanners and cloaking devices must be researched. The research requirements and features of planet-based scanners are described in the Planetary category of the Technology Browser; ship-based scanners are described in the Scanners section; cloaking devices are described in the Special section.

### Planet-penetrating scanners

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These scanners can detect fleets in orbit around a planet. They also can tell you planetary statistics from a distance.

### Normal, Non-penetrating Scanners

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These scanners cannot penetrate a planet. Any object orbiting the planet is hidden from your radar. Minefields are cloaked 82% from this type of scanner.

#### Minefields as Scanners

Minefields act as non-penetrating scanners for the players with the [Space Demolition trait](#). These scanners do not detect fleets orbiting planets.

### Scanners are Additive

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The formula for calculating a ship's scanner range is the 4th root of the sum of each scanner to the 4th power. Let's say you have a ship design with two 100 light year scanners and one 60 light year scanner:  $(100^4 + 100^4 + 60^4)^{1/4} = 120$  light years. The same calculation applies to planet penetrating scanners.

### Scanners and Primary Traits

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Some races have extra scanner technology. For example, if you've chosen [Packet Physics](#) as your primary trait, all your mineral packets will act as planet-penetrating scanners. If you choose Space Demolition all your minefields act as normal scanners.

## Selecting Fleets in the Scanner pane

[More about Scanning](#)

[Playing Stars!](#)

Fleets in orbit are indicated by a circle around the planet. To select a fleet in orbit:

1. Right click on the planet in the Scanner pane.
2. Select the enemy fleet from the popup list.

Follow the same procedure to select a fleet from a group in deep space.

If you own the ship, it appears in the Command pane.

## Enemy Fleet Summaries and Estimated Paths

---

The Scanner displays the estimated path of a selected enemy fleet as a line with the fleet triangle pointing in the approximate direction of travel. Tick marks appear on the line indicating how far the fleet will move in a year at its current speed. The enemy fleet summary appears in the [Selection Summary pane](#).

Using the fleet summary and the path, you can guess at the location of an opponent's origin and what type of activities they're up to. For example, if you select a fleet of attack ships, you can meet them in battle, and have a better idea of where those attack fleets are coming from and thus, where to aim your own big guns, or lay minefields. If the selected fleets tend to be scouts, miners or colonists, you'll have a clue to their strategy and possible needs.



## Scanning Planets

[More about Scanning](#)

[Playing Stars!](#)

When you scan an uninhabited planet, you'll be able to detect the environment and the concentration of each mineral under the planet surface, but not the minerals stored on the surface. If you attempt to scan a planet inhabited by an opponent, you can detect only the environment, underground mineral concentration and an estimate of the population (plus or minus 20%).

If the planet's starbase has cloaks, the distance at which you can detect the enemy's starbase is reduced.

## Cloaking, or Hiding from an Opponent's Scanners

[More about Scanning](#)

[Playing Stars!](#)

Cloaking devices allow you to reduce your opponent's effective scanner range in detecting your cloaked fleet or planet. Cloaking devices do not make your fleet or planet invisible: no matter how strong the cloak, the object will always be visible to another fleet at the same location.

Cloaking reduces your opponent's scanner range by a specific percentage. The higher the percentage, the more the range is reduced.

**The maximum cloaking is 98%.**

**Cloaking is shared by the entire fleet.** The cloaking percentage of a fleet is displayed in the [Fleet Composition tile](#), except when in small screen mode.

Uncloaked ships are also hidden in a cloaked fleet, although they do reduce the cloaking percentage. For a description of how cloaking is calculated, read [The Guts of Cloaking](#).

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### Tachyon Detector Defeats Cloaks

A Tachyon Detector reduces other player's cloaks and allows you to target cloaked ships on the first pass of targeting. The Tachyon Detector is described in the Special section of the Technology Browser and in [Detecting an Opponents Fleets](#).

When you add a Tachyon Detector to a hull design, the Hull Designer displays other player's cloaking effectiveness on the scanner information line.

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### Advantage of a Second Cloak

Cloaks are completely additive. Additional cloaks reduce your fleet's visibility.

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### Types of Cloaks

There are several types of cloaking devices. If your race is based on the [Super-Stealth primary trait](#), you also have access to cloaked armor--the Depleted Neutronium, a cloaked shield--the Shadow Shield, and one ship-based cloaked scanner--the Chameleon. Multiple cloaks on the same ship can all be of the same or different strengths. You add one or more cloaks when you create the ship design. To learn more about a specific cloak, open the Technology Browser (press F2) and view the Special category.

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### Cloaked Starbases

Adding cloaks to a starbase hull cloaks only the starbase, not the planet.

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**Learn about:**

[The Guts of Cloaking](#)

## Detecting an Opponent's Fleets

[More about Scanning](#)

[Playing Stars!](#)

### Scanners

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Having scanners on as many planets as possible reduces the chance that cloaked fleets will sneak past. For example, if your opponent has 75% cloaking, and your scanners normally detect fleets at a range of 200 light years, your effective scanning range will be reduced to 50 light years. If your scanners are close together, whether they be planet-based, ship-based, or a combination, you'll create a gauntlet that opponents' ships aren't as likely to sneak through undetected.

Also consider placing sentry ships at uninhabited planets along your border. They will help prevent any unseen planet-hopping by your opponents. Even if a ship is cloaked, you will still detect it when it passes by.

The X series of planet-based scanners and certain ship-based scanners can detect both fleets in deep space and fleets in orbit. Both these ranges are affected by cloaking. For example, if you are using a Snooper 250X planet-based scanner against a 75% cloak, the scanner will have effective ranges of 62 light years and 31 light years. If the ship is in orbit of a planet 32 light years away, you won't see it.

With the Scanner pane's Radar Overlay turned on, ask yourself: Will there be gaps in my coverage if each scanner only saw half as far? What about one-fourth as far? Adjust the percentage to show you give you an idea of what your coverage would be in relation to the cloaking ability of opponents' ships. For example, select 75% to show how close a fleet with 25% cloaking will need to be before you can detect it.

Keep in mind that a cloak only reduces a scanner's effectiveness in detecting the cloaked fleet. It fools the scanner, rather than physically changing it.

#### **Minefields as Scanners**

Minefields act as normal scanners for the players with the [Space Demolition trait](#).

### Tachyon Detector

---

This device reduces the effectiveness of other players cloak by 5%. The reduction is only seen by the fleet carrying the detector. The affect of multiple detectors is additive. If a fleet has two detectors, the first lowers the effectiveness of the opponent's cloak to 95%, the second detector takes the 95% and reduces it almost another 5%, down to 90.2%. This makes it significantly harder for enemies to sneak past fleets carrying this device. A great option for ships on regular patrol duty.

This device requires the [Inner Strength primary trait](#).

### Displaying Enemy Fleet Paths

---

Click on an enemy fleet to display its estimated path. The arrow representing the fleet points in the approximate direction of travel. Since a fleet travels in a straight line from waypoint to waypoint, you can use this path to determine the direction of the enemy fleet's last waypoint and potentially, its point of origin.

## Pirating using Stealth-based Scanners

[More about Scanning](#)

[Playing Stars!](#)

You need the [Super Stealth primary race](#) trait and a fleet with the Pick Pocket or Robber Baron scanner to steal cargo from an opponent's hold. Just set the opponent's [fleet as a waypoint](#), and set the [Transport order](#), to Load the amount you want to heist. The theft will automatically take place as soon as your pirate fleet reaches its victim.

You can steal only cargo, not colonists.

## Reports

### [Playing Stars!](#)

Reports list all statistics for all your planets and fleets, other player's fleets you know about, and battles.

- ⇒ Hide columns by clicking on the column label and selecting **Hide column name**.
- ⇒ Show a hidden column by clicking on any column and selecting **Show column name**.
- ⇒ Choose a new sort order by clicking on the label and choosing forward or reverse order.
- ⇒ Go to any item by clicking on its associated cell in the report.
- ⇒ Display related popup information by clicking on the statistics.

**Planet names** -- a yellow dot next to the name indicates a starbase capable of building ships. A blue dot indicates a starbase unable to build ships. A green dot indicates the planet has a stargate, a purple dot indicates the planet has a mass accelerator.

### Keyboard Shortcuts

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F3 opens the **Planet Summary Report**, then toggles to successive reports: second press opens the **Fleet Summary Report** for your fleets; third press opens the **Other's Fleet Summary Report**; fourth press opens the **Battle Summary Report**; fifth closes the report window.

The ESC key closes a report.

### Sorting Report Fields

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Sort any report by a specific field type:

- ⇒ Right click on a column header and select one of the popup options.

Reports handle up to two levels of sorting. For example, you can sort your planets by mineral content, then sort by starbases. The end result will have your planets sorted according to starbase type, with planets with identical starbases sorted according to mineral content.

### How the Sort Order Affects the Display Order of Planets and Fleets

---

You can change the order in which planets and fleets are displayed in the Command pane using the Reports form.

- ⇒ Click on a column header and change the sort order by selecting one of the options.

For planets, this matches the order in which planets appear in the [Planet tile](#) and [Production dialog](#) with the order shown in the Planet report. For fleets, this changes the order in which fleets appear in the [Fleet tile](#).

### Dumping (Exporting) Information to a Text File

---

To export basic information about the universe, planets and fleets to a plain text file, choose the **Dump to Text** command from the Reports menu. Each option (Universe, Planet, or Fleet) produces a file with the same base name of the current game and an extension of either .map (for the universe), .pla (for a planet) or .fle (for a fleet).

You can also print a map of the universe using the **File (Print Map)** menu item.

### Learn about:

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[Planet Reports](#)

[Fleet Reports](#)

[Battle Reports](#)



## Printing a Map of the Universe

### [Playing Stars!](#)

⇒ Print a pictorial map of the universe using the **File (Print Map)** menu item.

This sends a black and white "drawing" of the universe as seen in your scanner to your printer, with the black background reversed to white. You can specify how many pages of the universe you wish to print. The map supports the [Planet Names Overlay](#) and [No Player Info view](#).

## Diplomacy and Trade

### [Playing Stars!](#)

#### **Multi-player games only**

Stars! has features that allow you to practice diplomacy in multi-player games. Use the mail feature of the Message pane to communicate with other players, arranging alliances, rendezvous, trade agreements, joint remote mining ventures, and non-aggression pacts. (Stars! mail works equally well for hurling insults and taunts.)

Stars! does not require one winner. When you're setting up the game, you can specify winning conditions that encourage diplomacy by allowing for multiple winners.

#### **Player Relationships**

---

You can declare neutral and friendly players using the Player Relations dialog (select Player Relations from the Commands menu). This prevents you from attacking the wrong people and allows you to automatically come to a friend's aid if they're under fire. Friends can also pass through each other's mine fields without harm, automatically refuel at their starbases and are allowed to use their stargates. So it's worth while to set up alliances, even if they're temporary.

#### **Trading Fuel and Minerals**

---

You can also trade fuel and minerals with other players, sending messages to arrange the trade, then rendezvousing with the other player's fleet to give or receive minerals or fuel. Minerals can also be sent to another player's planet using a fleet-to-planet transfer or by flinging mineral packets to the planet (assuming the receiving planet has a mass driver of equal or greater strength otherwise you might have a war on your hands).

Fleet-related trades can be automated by setting your waypoints between planets or fleets, specifying Transport orders, then selecting Repeat Orders. Automate mineral packet-based trade by adding Mineral Packets (Auto Build) to your production queue and aiming the mass driver at the correct planet.

#### **Trading Technology**

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It is also possible to trade technological research data by scrapping fleets at each other's starbases. While this is not always 100% successful, due to the differences in each race's basic understanding of the laws of physics, it is a great way to add spice to an alliance.

#### **Trading Ships**

---

You can give fleets to other players using the [Transfer Fleets waypoint task](#). The other player can take the fleet if doing so would not cause them to exceed the maximum number of ship designs.. The receiving player cannot build additional ships of the types given by other players. They can, however, receive additional ships of the same type from the other player.

#### **Trading with Transdimensional Beings**

---

You might encounter a transdimensional being with technology to sell during the course of a game. If you can catch this Mystery Trader and give it what it wants, you may learn about technology that neither you nor any other player would normally be able to research and build.

#### **Joint Mining Ventures**

---

You can join with other players to remote mine a planet, each player using their own remote mining fleet and freighters or, since minerals can be transferred between different players fleets and planets, one player may mine then manually transfer the minerals to the other player's holds for transports to the agreed upon ports-o-call.



Any race with the [Super Stealth trait](#) can automate transferring cargo from another player's mining fleet as a waypoint task if the other player agrees, it's diplomacy; otherwise, it's piracy.

## **Claim Adjusters and Orbital Terraforming**

---

Races based on the [Claim Adjuster trait](#) can terraform other player's planets from orbit. This creates unique opportunities for diplomacy or war. If the owner is your Friend, you perform positive terraforming (adjusting planetary conditions toward the inhabitants' optimal conditions). If the owner is your Enemy, you perform negative terraforming.

Terraforming from orbit happens automatically as soon as your fleet arrives. Just set the destination planet as the fleet waypoint. No waypoint task is necessary.

### **Terraforming for Hire**

Terraforming from orbit requires a fleet outfitted with Orbital Adjusters. These are described in the Mining Robots section of the Technology Browser. Every race with the Claim Adjuster trait starts out with one ship outfitted with Orbital Adjusters.

Specify Friends, Enemies and Neutrals using the Player Relations dialog (press F7).

Terraforming from orbit is a great vehicle for diplomacy: in return for other technology, an alliance, or just a plain thank you, you can help your friends make their planets a better place to live. Only offer this assistance to friends who have lesser terraforming capabilities than yourself. Terraforming is not additive you can't combine your orbital terraforming abilities with those of the inhabitants to super terraform the planet. The planet will only be terraformed to the limits of whoever possesses the superior technology. For example, if the inhabitants have 3% terraforming and you possess 5% terraforming, the planet can be improved up to 5% from its original conditions (not exceeding optimal conditions for the inhabitants).

### **Giving Away Orbital Terraforming Technology**

To give this technology to a friend, just scrap the fleet carrying the Orbital Adjusters at your friend's planet. This will give them access to the Adjusters when 1) they can research the technology required to build the devices, and 2) they are able to build ships that can be outfitted with the Adjusters. Only a ship that can carry mining robots can carry Orbital Adjusters.

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#### **Read about:**

[Sending messages to other players](#)

[Specifying winning conditions](#)

[Declaring friends, neutrals and enemies](#)

[Adding fleet waypoints and tasks](#)

[Rendezvousing with other fleets](#)

[Transferring cargo](#)

[Flinging mineral packets](#)

[Remote mining](#)

## Changing the Basic Layout

From the main menu, select **View (Window Layout)**. Select **Small Screen**, **Medium Screen** or **Large Screen**. Choose the screen layout that works best with your video resolution.

## Shrinking and Growing Panes



You can change the size of each the four panes. Move the cursor to the line dividing panes. The cursor changes to indicate the directions the border can be dragged. Left-click and hold, then drag the cursor to a new position and release.

## Moving and Collapsing Tiles

Stars! contains a tile for each type of command you can give a planet or fleet. You can move and collapse these tiles, arranging and displaying them in any order you wish.

*To move a tile, click here and drag letting go when the tile is close to the new location.*



*Click here to collapse a tile.*



*Click here to expand a tile.*

# Commanding a Planet

[Selecting a Planet to Command](#)

[Obtaining a Planet Summary](#)

[The Rest of the Screen](#)

The Command pane is the command interface for each of your planets and fleets. When you select a planet to command, tiles for assigning planet-specific orders fill the pane.

To learn more about a tile, click on the picture.

The screenshot shows the Command pane for a planet named "Winter". The interface is divided into several sections:

- Winter:** Contains a planet image and "Prev" and "Next" buttons.
- Minerals On Hand:** A table listing resources: Ironium (125kT), Boranium (1525kT), Germanium (285kT), Mines (210 of 282), and Factories (232 of 235).
- Status:** A table listing planet statistics: Population (470,900), Resources/Year (890 of 890), Scanner Type (Snooper 250X), Scanner Range (125/250 l.y.), Defenses (66 of 100), Defense Type (Neutron Shield), and Def Coverage (92.24%).
- Fleets in Orbit:** Shows "Fleet #3" with Fuel (175 of 175mg) and Cargo (0 of 250kT). Includes "Goto" and "Cargo" buttons.
- Production:** Lists production levels: Medium Colonizer (1), Super-Fuel Xport (1), Min Terraform (Up to 10%), Factories (Up to 20), and Mines (Up to 10).
- Completion:** Shows "1 year" and "Route to Catnip". Includes "Change", "Clear", and "Route" buttons.
- Gateway to Hell:** Lists planet defenses: Dock Capacity (Unlimited), Armor (29800dp), Shields (2400dp), Damage (None), Mass Driver (Warp: 7), and Destination (None). Includes "Set Dest" and "Warp 7" buttons.

## Planet tile

[Other Planet-related Tiles](#)

[The Rest of the Screen](#)



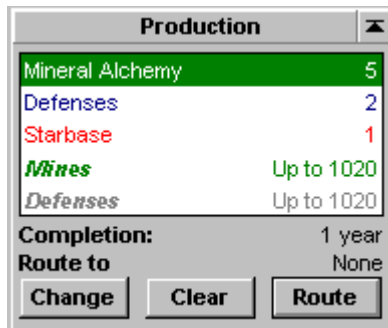
This tile displays the planet currently under your command.

Click on **Prev** and **Next** to scroll through your planets in the order they are listed in the Planet Summary Report. Hold down on the SHIFT key while clicking on Prev or Next to scroll between planets that have a starbase.

## Production tile

[Other Planet-related Tiles](#)

[The Rest of the Screen](#)



This tile displays the planet's production queue. Colors in the queue show completion status:

Green: all will be completed this turn

Blue: at least one will be completed this turn

Black: at least one more turn before even one is finished

Red: unbuildable due to shortage of required minerals

Gray: will be skipped this year

**Auto build** items are in italics.

Click on **Change** to alter production orders.

Click on **Clear** to remove everything from your production queue. Minerals and resources expended on partially completed items are not recoverable.

Click on **Route**, then click on a planet in the scanner to send all newly built ships to that planet. Alternately, CTRL-click in the Scanner on the destination planet.

---

**Read more about:**

[Routing Fleets](#)

## Status tile

[Other Planet-related Tiles](#)

[The Rest of the Screen](#)

Status	
Population	28,700
Resources/Year	38 of 38
Scanner Type	Viewer 50
Scanner Range	50 light years
Defenses	10 of 12
Defense Type	SDI
Def Coverage	14.2%

**Order Now!**

Left-click on items in the tile for more information.

This tile displays planetary population, scanner and defense statistics.

**Resources/Year** The tile displays the number of resources, or units of work, available for use by the planet out of the total number of resources generated by the planet annually. The difference, if any, is the number allocated to research.

**Defenses** -- Number of defenses deployed out of the maximum your population can operate.

**Defense Type** -- Current defense technology

**Defense Coverage** Estimated percentage of bombs, troops and mineral packet bombardments that can be stopped with current defenses.

---

### Learn more about:

[Population](#)

[Planet-based Scanners](#)

[Building Defenses](#)



## Minerals on Hand tile

[Other Planet-related Tiles](#)

[The Rest of the Screen](#)

Minerals On Hand	
Ironium	190kT
Boranium	446kT
Germanium	152kT
Mines	10 of 28
Factories	10 of 28

The upper half of this tile lists the amount of each mineral available for immediate use. The lower half tells you how many mines and factories are in operation out of the total number the population can operate.

**Order Now!**

Left-click on items in the tile for more information.

---

Learn more about:

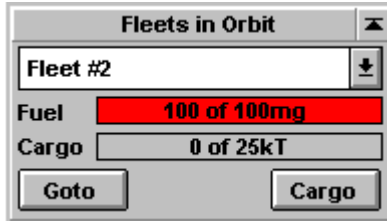
[Mining](#)

[Factories](#)

## Fleets in Orbit tile

[Other Planet-related Tiles](#)

[The Rest of the Screen](#)



Small screen layout: click on the **Cargo** button to display the cargo list.

The fleet dropdown lists all fleets and other objects in orbit. Fleets you own are listed in black. Fleets belonging to other players are listed in red.

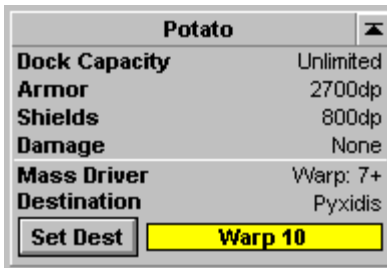
Click on **Cargo** to transfer cargo between your fleets and the planet.

Click on **Goto** to bring the specified fleet under command.

## Starbase tile

[Other Planet-related Tiles](#)

[The Rest of the Screen](#)



**Order Now!**

Left-click on items in the tile for more information.

This tile describes the local starbase, if any, and its mass driver.

To target the mass driver, click on **Set Dest** and then click on the destination in the scanner.

Left-click and drag in the gauge to set the packet speed. The warp specified is the maximum safe speed. The gauge color is purple as long as the speed is safe, changes to yellow when the speed is over the limit, and then to red when the maximum decay rate is reached.

---

### Learn about:

[Starbases](#)

[Mass Drivers](#)

# Commanding a Fleet

[Selecting a Fleet to Command](#)

[Obtaining a Fleet Summary](#)

[The Rest of the Screen](#)

The Command pane is the command interface for each of your fleets and planets. When you select a fleet to command, tiles for assigning fleet-specific orders fill the pane.

To learn more about a tile, click on the picture.

The screenshot displays the Command pane interface, divided into several sections:

- Fleet #2**: Includes a ship icon, a '+', and buttons for 'Prev', 'Next', and 'Rename'.
- Orbiting Ship Shape**: Contains 'Goto' and 'Xfer' buttons.
- Fleet Waypoints**: A list showing 'Ship Shape', 'Rodney', and 'Von Neuman's machine #14' (highlighted). Below the list, it shows 'Coming From: Rodney', 'Distance: 24.19 Light Years', 'Warp Factor: Warp 5', 'Travel Time: 2 years', and 'Est Fuel Usage: 238mg'. A 'Repeat Orders' checkbox is checked.
- Waypoint Task**: A dropdown menu set to 'Transport', a 'Colonists' dropdown, and an 'Unload All' button with a '0 kT' field.
- Fuel & Cargo**: Shows 'Fuel: 401 of 1100mg' (with a red progress bar) and 'Cargo: 25 of 25kT'. Below are resource amounts: Ironium (0kT), Boranium (0kT), Germanium (0kT), and Colonists (25kT).
- Fleet Composition**: Lists 'Jagger' (1) and 'Keep Truckin'' (1). It includes a 'Battle Plan' dropdown set to 'Default-Defense', 'Est. Range: 2999 l.y.', and 'Percent Cloaked: 50%'. Buttons for 'Split', 'Split All', and 'Merge' are present.
- Other Fleets Here**: A dropdown menu set to 'mine maude for elron'. Below it, it shows 'Fuel: 20 of 50mg' (with a red progress bar) and 'Cargo: 0 of 0kT'. Buttons for 'Goto', 'Merge', and 'Cargo' are present.

## Fleet tile

[Other Fleet-related Tiles](#)

[The Rest of the Screen](#)



This tile shows the fleet currently under your command. A fleet may contain several types of ships. The picture displays the most significant type of ship in the fleet. A small plus (+) sign represents each additional ship type (up to four).

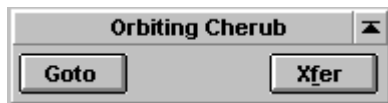
Click on **Prev** and **Next** to scroll through your fleets in the order listed in the Fleet Summary Report.

Click on **Rename** to rename the fleet.

## Location tile

[Other Fleet-related Tiles](#)

[The Rest of the Screen](#)



This tile displays the location of the fleet under command.

Selecting **Goto** switches to commanding the planet you're orbiting. You can't do this if you don't own the planet.

Click **Xfer** to transfer cargo between the fleet and planet.



For fleets in deep space, cargo transfer is replaced by cargo jettison. Click on **Jettison** to dump some or all of your cargo.

---

**Learn more about:**

[How to Manage Fleets](#)

[Jettisoning Cargo](#)

## Fuel and Cargo tile

[Other Fleet-related Tiles](#)

[The Rest of the Screen](#)

Fuel & Cargo	
Fuel	4485 of 4850mg
Cargo	377 of 1200kT
Ironium	143kT
Boranium	147kT
Germanium	87kT
Colonists	0kT

**Fuel** -- The Fuel gauge shows the current and maximum fuel level of the fleet under command.

**Cargo** -- The Cargo gauge shows the amounts of cargo loaded and the total capacity of the fleet.

Left-click in the cargo gauge to transfer or jettison cargo, or pick up available salvage.

Small screen layout: click in the Cargo gauge to see the cargo list.

---

### Learn more about:

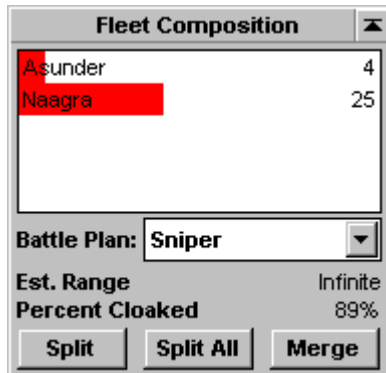
[How to Manage Fleets](#)

[Transferring Fuel and Cargo to other Fleets](#)

## Fleet Composition tile

[Other Fleet-related Tiles](#)

[The Rest of the Screen](#)



**Order Now!**

Left-click on a ship name to see design details and specs.

This upper half of the tile shows the name and number of each type of ship in the selected fleet. Damage levels are shown by the extent of a red bar over the name. Left-click on the name to see design details and the exact extent of the damage.

To change the battle plan for the fleet under command, choose a new plan from the dropdown list. To view, create or edit a battle plan, select **Battle Plans...** from the dropdown list.

Click on **Split All** to break up the fleet into separate fleets of a single ship type.

Click on **Split** to divide the fleet in two.

Click **Merge** to merge the fleet with other fleets in the same location.

---

**Learn more about:**

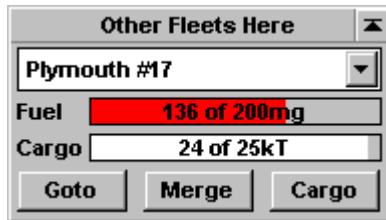
[How to Manage Fleets](#)

[How to Manage Battles](#)

## Other Fleets Here tile

[Other Fleet-related Tiles](#)

[The Rest of the Screen](#)



Small screen layout: click on the **Cargo** button to display fuel and cargo amounts.

This tile lists all other fleets, mass packets or other objects in the same location as the fleet under command.

Click and drag in the fuel gauge to transfer fuel between the fleet under command and the fleet specified in the tile.

To bring another fleet here under command, choose one from the dropdown list, then click **Goto**.

Click on **Merge** to transfer ships between the fleet under command and the fleet shown in the tile.

Click on **Cargo** to transfer cargo between the fleet under command and the fleet or object specified in the tile.

---

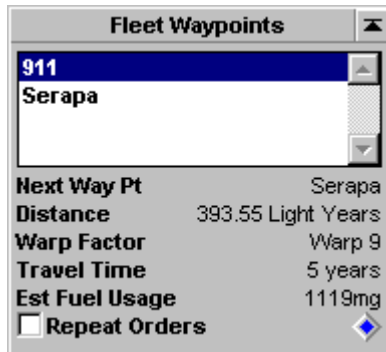
Learn more about:

[How to Manage Fleets](#)

## Fleet Waypoints tile

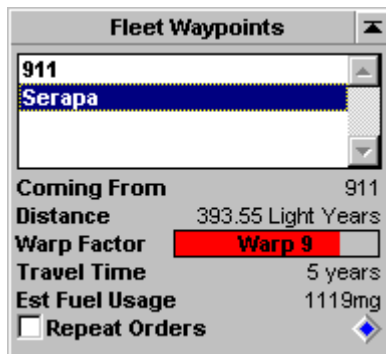
[Other Fleet-related Tiles](#)

[The Rest of the Screen](#)



The Fleet Waypoints tile lists all the waypoints assigned the fleet under command. The first waypoint listed is the current location. If the fleet are in transit between waypoints, the location is given as coordinates in deep space.

Right-click on the blue diamond to display a list of items at the same location as the selected waypoint. Select an alternate item to change the exact waypoint target.



**Warp Factor:** By default, Stars! chooses the ideal speed for reaching the next waypoint with the fuel available. To manually set the speed select the waypoint from the list, then left-click and drag in the Warp gauge.

To use a stargate, drag the bar all the way to the right. If you're not at a stargate, the travel time will display Never.

**Fuel Usage:** This tells you exactly how much fuel the fleet will use to reach the waypoint at its current speed. The number turns red if you can't reach the waypoint given the current speed and fuel supply.

**Repeat Orders:** Repeats the total set of orders you assigned using the Waypoints Task tile. Assigning repeat orders works best when the first waypoint in the list is repeated as the last.

---

Learn more about:

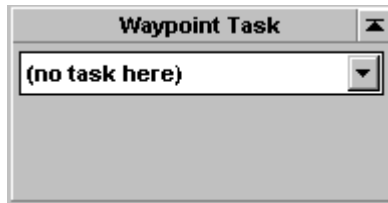
[How to Assign Waypoints](#)



## Waypoint Task tile

[Other Fleet-related Tiles](#)

[The Rest of the Screen](#)



This tile shows the task the fleet must perform at that waypoint selected in the Fleet Waypoints tile. Click on the dropdown to assign a task.

### **For all waypoint tasks except Patrol**

If the fleet comes under attack it will defend itself using the Default battle plan.

---

### **Learn about these waypoint tasks:**

[Transport](#)

[Colonize](#)

[Remote Mining](#)

[Merge with Fleet](#)

[Scrap Fleet](#)

[Lay Mine Field](#)

[Patrol](#)

[Transfer Fleet](#)

---

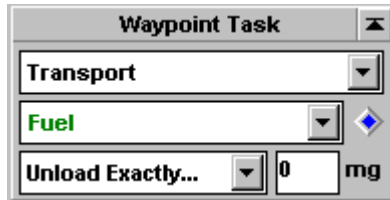
### **Learn more about:**

[How to Assign Waypoints](#)

## Transport


[Other Waypoint Tasks](#)

[Other Fleet-related Tiles](#)



Use this task to load or unload minerals, fuel or colonists.

The middle dropdown lists cargo types. The bottom dropdown lists methods of loading and unloading. When you assign a load/unload action, the cargo name turns from black to green to distinguish this cargo from those which have no action assigned. Some actions allow exact amounts to be specified.

 Zip Orders: To quickly load fuel, minerals and colonists, right-click on the blue diamond and choose a pre-defined order from the list. If a Zip Order doesn't quite meet your needs, you can create your own or modify the existing order.

### Load / Unload Actions:

- |  |  |
|--|--|
| <b>(no action)</b>                                   | No transport task for the specified cargo.   |
| <b>Load All Available</b>                            | Loads as much of the specified cargo as the fleet can hold.  |
| <b>Unload All</b>                                    | Unloads all the specified cargo at the waypoint.   |
| <b>Load Exactly...</b>                               | Load the amount specified only if there is room in the hold.   |
| <b>Unload Exactly...</b>                             | Unloads the amount specified only if the fleet is carrying that amount.  |
| <b>Fill up to %...</b>                               | Loads up to the specified portion of the cargo hold subject to amount available at waypoint and room left in hold.   |
| <b>Wait for %...</b>                                 | Loads exactly X % of the hold's capacity. The fleet stays at the waypoint until the order is filled.   |
| <b>Load Optimal</b><br>(fuel only)                   | Loads or unloads fuel until the fleet carries only the exact amount needed to reach the next waypoint. A good use of this task is to send a fleet loaded with fuel out to rescue a stranded fleet, specifying Load Optimal. The rescue fleet will transport only the amount of fuel it can spare without stranding itself.   |
| <b>Load Dunnage</b><br>(minerals and colonists only) | This command waits until all other loads and unloads are complete, then loads as many colonists or amount of a mineral as will fit in the remaining space. For example, setting Load All Germanium, Load Dunnage Ironium, will load all the Germanium that is available, then as much Ironium as possible. If more than one dunnage cargo is specified, they are loaded in the order of Ironium, Boranium, Germanium, and Colonists. |
| <b>Set Amount to...</b>                              | Loads or unloads the cargo until the <b>amount on board</b> is the amount specified. If less than the specified cargo is available, the fleet will not move on.  |
| <b>Set Waypoint to...</b>                            | Loads or unloads the cargo until the <b>amount at the waypoint</b> is the amount specified. This order is always carried out to the best of the fleet's ability that turn but does not prevent the fleet from moving on.   |

---

### Learn more about:

[How to Manage Fleets](#)

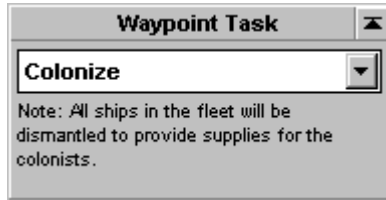
[Creating Custom Transport Zip Orders](#)

[Transporting Freight](#)

## Colonize

[Other Waypoint Tasks](#)

[Other Fleet-related Tiles](#)



Use this task to transport colonists to an unpopulated planet. The fleet must contain a ship with a colonization module, and must be loaded with colonists. Once the colony is established you can use freighters to transport additional colonists.

---

### Learn more about:

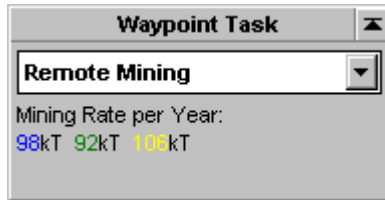
[Colonization](#)

[How to Colonize](#)

## Remote Mining

[Other Waypoint Tasks](#)

[Other Fleet-related Tiles](#)



Use this task to mine an uninhabited planet. The fleet must have robot miners. The quantity of each mineral the fleet can mine annually is shown by color and tonnage.

Blue -- Ironium

Green -- Boranium

Yellow -- Germanium

---

### Learn more about:

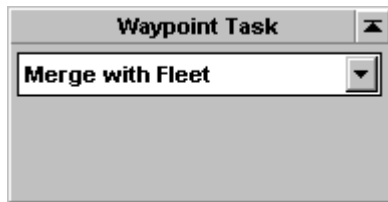
[Remote Mining](#)

[How to Manage Fleets](#)

## Merge with Fleet

[Other Waypoint Tasks](#)

[Other Fleet-related Tiles](#)



Use this task to merge the fleet under command with a fleet at the waypoint. The fleet given this task will be assimilated into the target fleet and assume its orders.

To pick from multiple fleets at the waypoint, right-click on the blue diamond in the Fleet Waypoints tile. Otherwise, Stars! will pick the dormant fleet with the most similar ships.

---

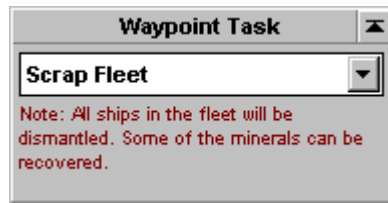
**Learn more about:**

[How to Manage Fleets](#)

## Scrap Fleet

[Other Waypoint Tasks](#)

[Other Fleet-related Tiles](#)



Use this task to salvage a portion of the minerals in the hulls of outdated or unrecoverable ships. Players can also trade technological knowledge by scrapping ships at each other's planets.

The minerals are deposited on the planet where the fleet is scrapped. The percentage of minerals recovered varies depending on the situation.

- ◆ **Colonization mission** -- leaves 75% of the minerals used in construction on the surface of the planet.
- ◆ **Scrap Fleet at a starbase** -- leaves 80% of the minerals used in construction on the surface of the planet. If your race has the Ultimate Recycling secondary trait, you recover 90% of the minerals and 70% of the resources used to produce the fleet.
- ◆ **Scrap Fleet at any planet without a starbase** -- leaves 30% of the minerals used in construction on the surface of the planet. If your race has Ultimate Recycling, you'll recover 45% of the minerals and 35% of the resources.
- ◆ **Scrap Fleet in deep space** -- everything is lost.

---

**Learn more about:**

[How to Manage Fleets](#)

## Lay Mine Fields

[Other Waypoint Tasks](#)

[Other Fleet-related Tiles](#)

Waypoint Task	
Lay Mine Field	▼
<b>indefinitely</b>	▼
This fleet can lay 600 mines per year.	

Use this task to lay mines at the waypoint. Fleets given this task must have mine layers. The tile notes how many mines the fleet will lay for each year it performs the task.

---

### Learn more about:

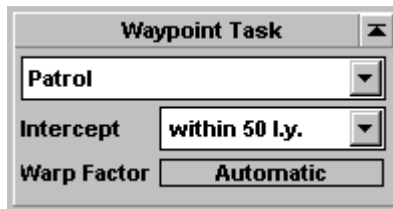
[How to Lay Mines](#)

[All About Minefields](#)

## Patrol

[Other Waypoint Tasks](#)

[Other Fleet-related Tiles](#)



The image shows a screenshot of a 'Waypoint Task' interface. It features a title bar with the text 'Waypoint Task' and a small icon on the right. Below the title bar, there are three rows of controls. The first row has a dropdown menu with 'Patrol' selected. The second row has the label 'Intercept' followed by a text field containing 'within 50 l.y.' and a dropdown arrow. The third row has the label 'Warp Factor' followed by a text field containing 'Automatic'.

Use this task to intercept incoming enemy fleets. Set the detection range to specify how far away the patrol ship will look for interlopers. Manually select an intercept speed, or use the default of Automatic intercept in the shortest possible time using the least amount of fuel.

---

### Learn more about:

[Patrolling](#)

[The Basics of Combat](#)

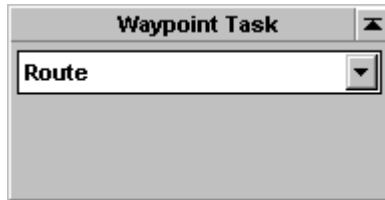
[How to Manage Fleets](#)



## Route

[Other Waypoint Tasks](#)

[Other Fleet-related Tiles](#)



Use the Route **task** to automatically send fleets from one planet to another. If the waypoint planet has a routing destination, the fleet assigned this task will automatically set that destination as its next waypoint.

Route **destinations** are set using the Production tile.

---

**Learn more about:**

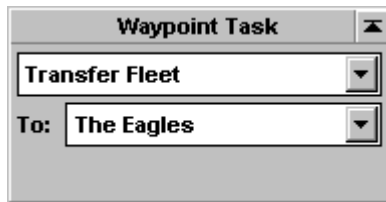
[Routing Fleets](#)

[How to Manage Fleets](#)

## Transfer Fleet

[Other Waypoint Tasks](#)

[Other Fleet-related Tiles](#)



Use this task to place one of your fleets under the command of another player, and to give that player knowledge of the design of all ships in that fleet.

This task will fail if the receiving player does not have enough free ship design slots.

---

**Learn more about:**

[Designing Ships](#)

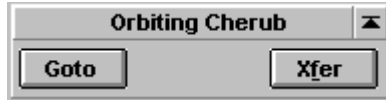
## Selecting an Object to Command

[Fleet-related Tiles](#)

[Planet-related Tiles](#)

[The Rest of the Screen](#)

Stars! provides more than one way to command a planet or fleet. Use the method that suits your needs.



To command the planet you are orbiting, click on **Goto** in the Location tile. (The planet must already belong to you.)

**Order Now!**

From the Command pane, you can select one of your fleets in the same location using the Fleets in Orbit tile. Just choose a fleet from the dropdown list and click on **Goto**.

You can also use the [Scanner pane](#) to bring either a planet or fleet into the Command pane. If the object you wish to command is the only thing at that location, just double-click on it in the Scanner.

When more than one object is in the same location, do one of the following:

- ⇒ Right-click on the location, then click on the name of the object from the pop-up list.
- ⇒ Left-click on the location till the object you wish to command appears in the Command pane.

When clicking on a location to cycle through your planet and fleets, other player's fleets are skipped. Even though you'd like to, you can't display these fleets in the Command pane. Other player's fleets, if present, are listed in the pop-up: selecting one will display what you know about that fleet in the [Selection Summary pane](#).

## Obtaining a Summary of a Planet, Fleet or other Object

[Fleet-related Tiles](#)

[Planet-related Tiles](#)

[The Rest of the Screen](#)

To just obtain a summary of a specific planet, fleet or other object, left-click once on the object in the Scanner. A small yellow selection arrow appears under the object you select. The status bar under the [Scanner pane](#) displays the name of the object, and the distance from the object in the Command pane. The [Selection Summary pane](#) changes to display what you know about the selected object.

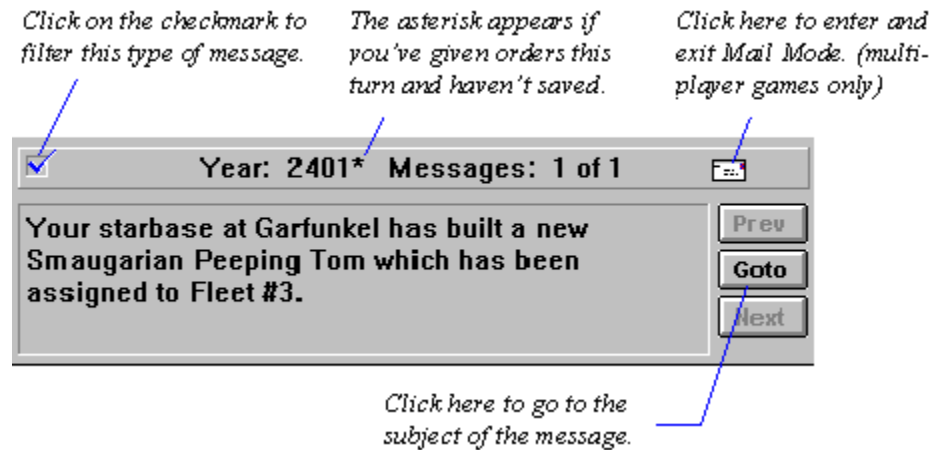
You can also use the **View (Find)** menu item to locate a fleet or planet and display its summary.

## Messages pane


### [The Rest of the Screen](#)

The Messages pane allows you to effectively manage your empire. Stars! generates a lot of messages to inform you of most significant events that happen each year of the game. From this pane, you can view these messages, open a dialog related to the current message, and change your Command and Scanner pane selection to the planet or fleet described in the message.

You can also view messages from other players and compose and send messages to other players.



The text in the title bar tells you three things:

- ◆ The current year or turn. Since every game starts in the year 2400, the example shows that it's currently turn number 2.
- ◆ Whether or not you have made changes and need to save.  An asterisk follows the year if you have unsaved changes.
- ◆ How many messages you were sent this turn, and the number of the message displayed.

---

### Read more about Messages:

[The Goto, Previous and Next Buttons](#)

[Filtered Message Checkbox](#)

[Filtering Message Types](#)

[Sending Messages to Other Players](#)

## The Goto, Previous and Next Buttons

- ⇒ Click on the **Goto** button or use the ENTER key to go to the object of the current message.
- ⇒ Click on the **Next** and **Prev** buttons to see the next or previous message.
- ⇒ To see the **first** message, press **SHIFT** and click on **Prev**.
- ⇒ To see the **last** message, press **SHIFT** and click on **Next**.
- ⇒ The Up and Down Arrow keys can also be used in place of Prev and Next.

## **Filtered Message Checkbox**

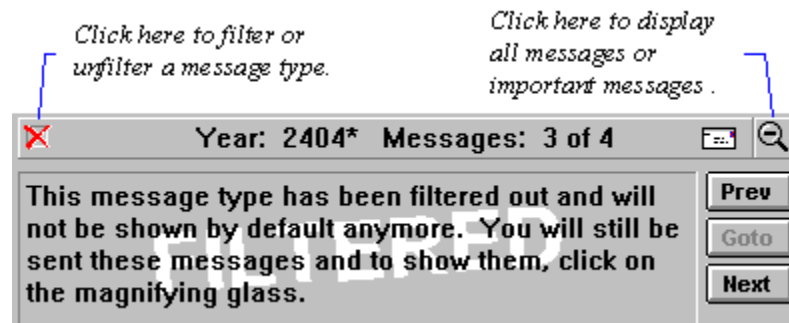
If this box is checked, the message type is not filtered out. If the box contains an X, the message type is filtered and will not display.

⇒ Left-click on the box to filter out that message type. The check mark changes to a red **X**.

## Filtering Message Types

### [Messages Pane](#)

### [The Rest of the Screen](#)



Over time you'll find that some types of messages are too trivial to provide you with useful information. The example shows what happens when you filter out a message.

- ⇒ To filter out a message type, click on the blue check mark in the title bar. The mark changes to a red X and a magnifying glass containing a minus appears in the title bar. This means you're only viewing the messages you feel are important. These messages are filtered out for the remainder of the game, unless you choose to unfilter them.
- ⇒ To display all messages, including filtered messages, click on the magnifying glass. The glass changes to contain a plus.
- ⇒ To return to viewing only important messages, click on the magnifying glass again.
- ⇒ To unfilter the type of message displayed, click on the red X. The X changes back to a blue check. Now you will see messages of that type by default.

Even though you filter out a message type, Stars! continues to send you all important and unimportant messages. When you filter out a message, you're only specifying that it's no longer important and that you probably won't want to see it again.




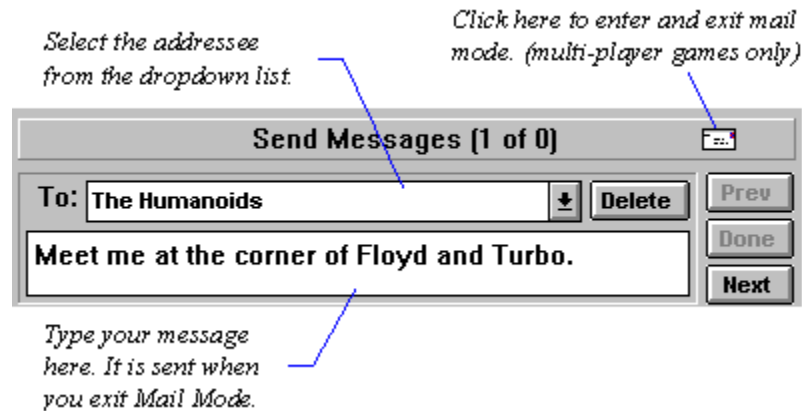
## Sending Messages to other Players

[Messages Pane](#)

[The Rest of the Screen](#)

### Multi-player Games Only

 The envelope appears only if you are playing against other humans. Selecting the envelope replaces the message viewer with a mail form.



Your pen pal will receive your message in their next turn. You can use this system to set up diplomatic relations or trade, taunt your enemies, whatever you wish.

## Scanner pane

### [The Rest of the Screen](#)



The Scanner pane is your window on the universe, showing what you do and don't know. All the planets in the universe are displayed, along with every other object you know about. When you start the game, all the planets except your home world are displayed as dim gray specks. Once you visit an uninhabited planet, it turns white in the scanner, indicating that you have data on it. All players see the same map, from their own perspective. Learn about the universe by selecting objects and different views. You also assign waypoints for your fleets using the scanner, and can view fleet locations: those owned by you as well as any opponent fleets that your radar can detect.

---

### **Read more about the Scanner pane:**

[Key to the Scanner](#)

[Quick Reference to Scanner Usage](#)

[Choosing Your View of the Universe](#)

[Status Bar Information](#)

[Zooming](#)























[Displaying Player Colors](#)

## Key to the Scanner

[Other Scanner Topics](#)

[The Rest of the Screen](#)

Click once on an object to display a description of it in the [Selection Summary pane](#). The following key lists the objects you'll find in the scanner pane--the scope of the summary depends on what your race currently knows about the object.

<b><i>Planets - Normal View</i></b>		<b><i>Fleets</i></b>	
	Dim gray - a planet you know nothing about		Fleet marker
	White - a planet you have visited		Fleet under command now
	A planet you own		Your fleet
	An opponent's planet		An opponent's fleet
	A friend's or neutral's planet		You and an opponent have fleets in close proximity. Increase the scanner zoom factor to see the fleets separately (if possible).
<b><i>Orbital Devices</i></b>		<b><i>Mass Packets and Salvage</i></b>	
	Starbase capable of building ships		Your mass packet
	Starbase not capable of building ships		An opponent's mass packet
	Mass driver		Salvage
	Stargate	<b><i>Spacial Anomalies</i></b>	
<b><i>Orbiting Fleets</i></b>			Wormhole
	You are in orbit	<b><i>Estimated Paths</i></b>	
	One or more opponents are in orbit		Click on an enemy fleet or any player's mass packet to display the item's estimated path. Ticks show direction and est. annual progress.
	You and one or more opponents are in orbit		

## Quick Reference to Scanner Usage

[Other Scanner Topics](#)

[The Rest of the Screen](#)

The following commands work in any scanner view.







<b>Set Waypoints</b>	SHIFT-left click on the waypoint.
<b>Route Fleets</b>	CTRL-left click on the destination planet.
<b>List Objects at Waypoint</b>	Right click on the waypoint.
<b>Measure Distance</b>	Hold down SHIFT, then right-click and drag.
<b>Show your current location</b>	Press V.

## Choosing Your View of the Universe


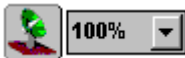
[Other Scanner Topics](#)

[The Rest of the Screen](#)

To [display a specific view](#) of the universe, click on one of these buttons or press the associated key. There are six exclusive scanner views, which you can use with one or more overlays.

<b>Tool</b>	<b>Key</b>	<b>View name</b>
	1	<a href="#">Normal view</a>
	2	<a href="#">Surface Minerals view</a>
	3	<a href="#">Mineral Concentration view</a>
	4	<a href="#">Planet Value view</a>
	5	<a href="#">Population View</a>
	6	<a href="#">No Player Information view</a>

Specify one or more overlays or filters using these buttons or keys. These overlays can be used in any combination.

<b>Tool</b>	<b>Key</b>	<b>Name</b>
	None	<a href="#">Add Waypoints</a>
	7	<a href="#">Scanner Coverage</a>



8

[Mine Fields](#)



9

[Fleet Paths](#)



0

[Planet Names](#)



**SHIFT-0**  
or )

[Ship Count](#)



None

[Idle Fleets filter](#)



None

[Ship Design filter](#)

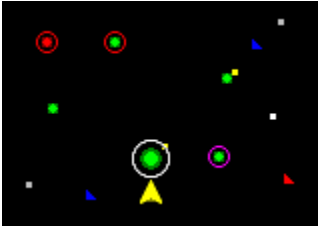


None

[Enemy Ship Class filter](#)

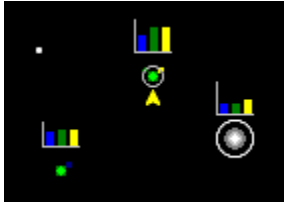
**Tip:** Hide or show the toolbar using the **View (Toolbar)** menu item.

## Normal view



This is the default scanner mode, allowing you to easily view and manipulate all of your planets and fleets. This view displays the route of the selected fleet and shows, using color, which planets you inhabit, have visited or scanned, or know nothing about.

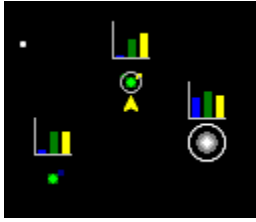
## Surface Minerals view



The bar graph at each colonized planet shows the amount of minerals under the surface, the top of the Y axis being 100%. This amount is mirrored in the Selection Summary pane. The height of the bars change if you change the scale by clicking on the bottom of the Summary pane's [Mineral Content graph](#). Each color matches the color of the mineral in the Mineral Content graph:

- ◆ **Blue** -- Ironium
- ◆ **Green** -- Boranium
- ◆ **Yellow** -- Germanium

## Mineral Concentration view

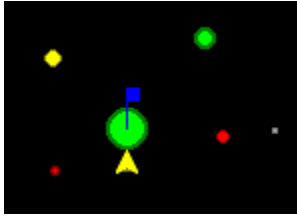


The bar graph at each colonized planet shows the concentration of minerals under the surface, the top of the Y axis being 100%. Each color matches the color of the mineral in the Selection Summary pane's [Mineral Content graph](#):

- ◆ **Blue** -- Ironium
- ◆ **Green** -- Boranium
- ◆ **Yellow** -- Germanium



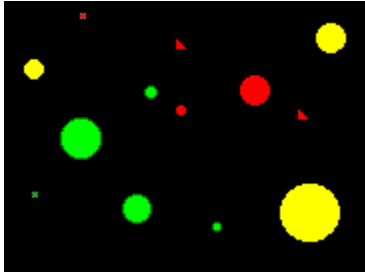
## Planet Value view



This view represents planet size based on the habitability value. Orbiting ships are not shown in this view. The color specifies the planet type:

- ◆ **Green planets** -- habitable by your race. The larger the circle, the more hospitable the planet.
- ◆ **Yellow planets** -- can be terraformed to become habitable. The larger the circle, the quicker you'll be able to make the planet inhabitable, and the more hospitable the planet will be after you terraform it to the limits of your technology.
- ◆ **Red planets** -- uninhabitable by your race. As terraforming technology improves, some red planets may become yellow. Larger circles indicate less habitable planets.

## Population view



This view displays planets you own in green, planets owned by friends in yellow, and planets owned by neutrals and enemies in red. The bigger the circle, the larger the population. Unowned planets you've visited are bright white.

**Note:** Don't confuse the yellow planets in this view with the yellow planets in the Planet Value view. In the latter view, yellow specifies a planet your race can terraform.

### **No Player Information view**

This view hides all traces of planet ownership in the scanner. You can use this view with the Planet Names overlay to plot strategy with another player without revealing your empire. If an opponent will be looking at your screen, make sure you select a planet before you select this view. If a fleet is selected, its waypoint path will be shown.

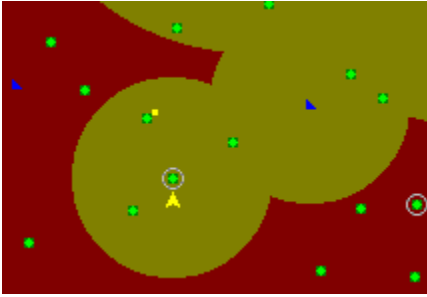
## **Add Waypoints mode**

This mode allows you to use only the mouse to add waypoints for the selected fleet (the fleet displayed in the Command pane). It can be used with any of the overlays and filters.

- ⇒ To add a waypoint, select the fleet then left-click on the waypoint location.
- ⇒ To delete a waypoint, left-click on the waypoint and press BACKSPACE.
- ⇒ Change waypoint locations when the cursor turns into a hand. Left click on the waypoint and drag it to a new location.

**Note:** You may quickly find that using this mode is unnecessary. You can add waypoints in ANY view or overlay by pressing the SHIFT key and left-clicking in the scanner. This mode exists primarily to help beginning players, or for anyone who wants to eat and play at the same time.

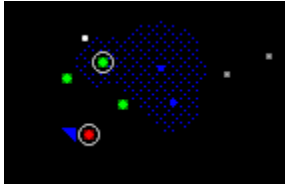
## Scanner Coverage overlay



The radius of each circle is that scanner's detection range.

Use the Scanner Effectiveness dropdown to scale down the **displayed** coverage and look for areas of lesser coverage that an enemy fleet might sneak through. For example, setting the displayed coverage to 30% shows paths that a fleet with 70% or better cloaking could pass through undetected. **Reducing the displayed coverage does not change the actual coverage.**

## Mine Fields overlay

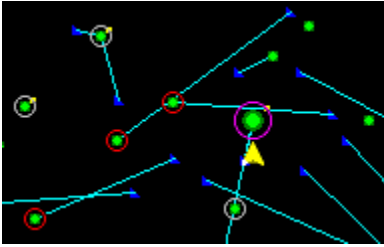


This overlay shows only those minefields within scanner range. All minefields appear as circular grids. Your mine fields are blue, friendly mine fields are yellow, and enemy or neutral mine fields are red. You can specify which mine fields you wish to view.

A mine field is 75% cloaked if you haven't entered it before. Minefields are always cloaked 75% from non-penetrating scanners. You can see both the center and radius of another player's minefield under these circumstances:

- ◆ The center of the minefield is in range of your penetrating scanner, OR
- ◆ You have hit the minefield at least once and the center is in range of your normal scanners, OR
- ◆ You are currently IN the mine field.

## Fleet Paths overlay



This overlay shows the assigned paths of all your fleets. This overlay is useful for spotting fleets that have no assigned waypoints and planets you own that have no traffic going to them. Also, which fleet may approach closest to a fleet that is stranded, or which fleet may be able to intercept an opponent's fleet or beat an opponent's fleet to colonizing a planet.

This overlay is turned off when the **No Player Info** view is used.

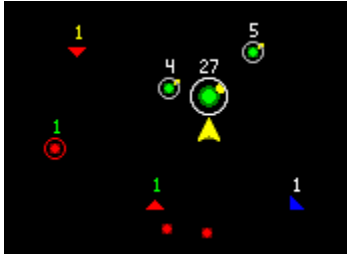
## **Planet Names overlay**

This overlay displays the name of each planet. You can use this overlay with the No Player Information view to plot strategy with another player without revealing your empire. If you prefer locating planet waypoints by name, you may also prefer to use this view when assigning waypoints. If the names grow too crowded, [increase the zoom factor](#) to place more distance between planets.

If Player Colors is turned "on" the planet names appear in the color assigned to that player. Your planet names always appear in white.



## Ship Count overlay



This overlay displays the number of ships at each location above the fleet symbol. If you are filtering for specific ship types, only that number is displayed. For example, if you have a filter that displays only enemy warships, the count above each fleet symbol will be the count of just warships, not the total number that may actually be in the fleet.

If Player Colors is turned "on" numbers appear in the color assigned to that player. Your fleet numbers always appear in white.

## **Idle Fleets filter**

This shows only your fleets that have no movement orders, and any active enemy ships (so you can match one with the other, if you wish). If your fleet is orbiting a planet, only those planets with idle fleets will show orbit rings. If the fleet is in space, it appears as a blue triangle.

Fleets that have run out of fuel are still considered active, and won't appear if you're using only this overlay.

### **Idle Fleets filter notes**

Idle enemy fleets are filtered out of the scanner when you select the Idle Fleets filter.

Claim Adjuster fleets doing remote terraforming are not considered idle.

### **Ship Design filter**

This filter allows you to display only those fleets that contain a selected ship design. Select the design to display ships of that type in the scanner. If the selected ships are all in orbit, only the associated planets will have orbit rings. If the ship is in space, it appears as a blue triangle.

You can select any or all of your ship designs for display.

### **Enemy Ship Class filter**

This overlay displays the opponent fleets containing the selected ship class. Opponent fleets appears as red triangles.

You can select any or all of the opponent ship classes for display.

## Status Bar

[Other Scanner Topics](#)

[The Rest of the Screen](#)

ID #114 X: 1702 Y: 1105 Utopia

55.04 light years from Garfunkel

This bar displays the selected planet's ID, X and Y coordinates, and name.

If a fleet in deep space is selected, this bar displays the fleet coordinates and number. If the fleet is in orbit around a planet, only the planet information is displayed.

This bar also displays the distance in light years between the object you've selected in the scanner and the object you are commanding (the object in the Command pane). If they are at the same location, the bar is blank.

### **Distance and the Scanner "Grid"**

When you set a waypoint, notice that the Scanner snaps to a "grid". The grid snap is one light year, and can't be redefined. Vertical or horizontal distance is measured in whole years. Diagonal distance across a grid coordinate is a decimal amount.

The full set of information shows only if the Scanner pane is wide enough to display the information. If the scanner window is too narrow, only the object name is displayed. If the text is too small to read, left-click in the bar to display the popup.

## Zooming

[Other Scanner Topics](#)

[The Rest of the Screen](#)

⇒ To zoom in or out of the Scanner, use the **View (Zoom)** menu command or click on the Zoom tool:



Stars! can zoom the scanner from 25% to 400%. The zoom factor does not change the way you select and command fleets and planets.

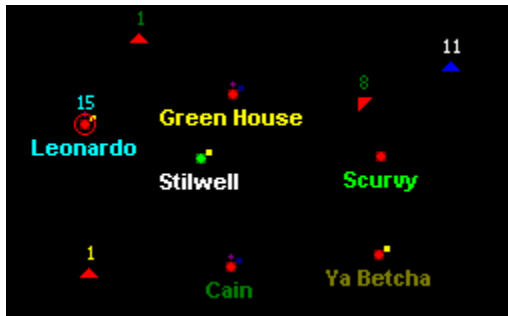
If you have trouble selecting a particular planet or fleet because the Scanner Pane is too crowded, just increase the zoom factor a bit. If you are plotting global strategy and need to see your whole empire just decrease the zoom. To quickly zoom in and out, use the + and - keys on the numeric keypad.

**Tip:** You can also change the amount of universe displayed by left-clicking and dragging on the left or bottom edge of the scanner pane or by using the menu command, **View (Window Layout)**.

## Displaying Player Colors

[Other Scanner Topics](#)

[The Rest of the Screen](#)



You can display planet names and fleet sizes (ship counts) in the Scanner in each player's color. Stars! assigns each player a color when the game is created. When Player Colors are "off" all fleet numbers and planet names appear in white. When Colors are "on" your planet names and fleet numbers display as white. Other players will see them as the color assigned by Stars!.

⇒ Use the **View (Player Colors)** menu item to turn player colors "on" and "off".

The colors appear only if you choose the [Ship Count](#) or [Planet Names](#) overlays for the Scanner. Both of these overlays may be turned on and off using the [Scanner toolbar](#).

You can learn which colors belong to other players using the [Score sheet](#). Just choose **Reports (Score)**, then click on Switch until the History Graph appears with the player colors listed.

## Selection Summary pane

### [The Rest of the Screen](#)

The Selection Summary pane displays what you know about an object selected in the Scanner pane. For planets, it reports on the population size and habitability value, environment and mineral content of the planet. For enemy fleets, it displays the owner's race icon, and some information about the fleet composition. For your fleets, it displays a summary of the fleet composition and cargo.

If you select a minefield, wormhole, or mineral packet, this pane displays what you know about that object.

---

Read about each type of summary:

[Planet Summary](#)

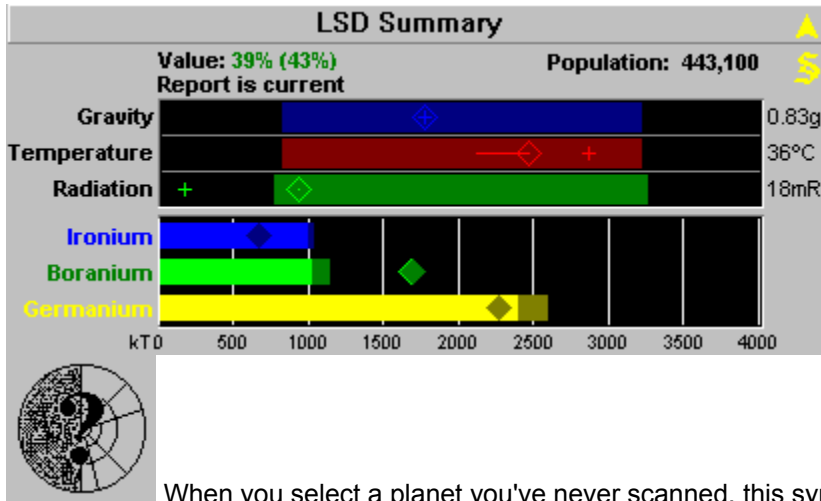
[Fleet Summary](#)



## Planet Summary

[The Rest of the Screen](#)

Click on each item in the picture for details.



When you select a planet you've never scanned, this symbol appears as the Selection Summary.

## Multiple Objects Indicator

[Back to the Planet Summary](#)

- ▲ When this arrow is bright yellow, you have information about more than one of the objects at the selected location.
- ⇒ Left-click on this arrow to cycle through the objects at this location. The Summary pane and other displays change with each object.
- ⇒ Right-click on this arrow to display a list of everything at the location, then left-click on an object in the list. Whatever you select appears in the Summary pane.

## **Report Vintage**

[Back to the Planet Summary](#)

This line shows the age of the information in the Summary pane. This summary is only as new as your last visit or scan of the planet. If you have colonized the planet, the information is always current. The summary may not be accurate if another player has made changes to the planet since you last visited.

## Population Status

[Back to the Planet Summary](#)

**Uninhabited** -- The planet is free for colonization or remote mining. The [Habitability Value](#) shows if the planet is safe to colonize or terraform.

**Population number** -- how many colonists currently live on the planet. If you own the planet, the number is exact. If another player owns the planet, the number is a guess (since you are understandably denied the ability to conduct a door-to-door census of your neighbors.)

### **Order Now!**

If you own the planet, left-click on the population to display the current and maximum population, and growth rate. If the planet is owned by an opponent, left-clicking displays a guess on the defensive capability of the planet.

---

**Learn more about**

[Population](#)

## Habitability Value

[Back to the Planet Summary](#)

This number helps you to decide if you should colonize the selected planet. The higher the Value percentage, the more habitable the planet is to your race. The values range from -45% to 100%, with 100% as the optimum value. An accompanying number in parentheses indicates the value after terraforming using your current technology.

Notice how these numbers compare with the contents of the Environment Graph, the first number associated the locations of each diamond in the graph, the second number associated with the values at the end of the lines projecting from the diamonds.

**Positive value** -- Indicates the maximum population size possible for your race on that planet, given the current conditions. The Value is a percentage of the absolute maximum of 1,000,000 people. For example, if a planet has a value of 29%, it will support up to 290,000 of your people. Of course if you have selected racial traits that alter your maximum population, the value is a percentage of that number.

**Negative value** -- A rough estimate of how fast your colonists will die on the planet. For example, if the value is -10%, 10% of your colonists will die each turn.

If you have terraforming technology, you may be able to modify the planet's environment to support more of your people. While you are terraforming a planet, none of your colonists will die.

**Growth Rate** -- The Value also approximates the maximum rate at which your population will grow. For example, if your population's maximum growth rate is 10% and the Value is 30%, your population will grow at a maximum of 30% of the 10% growth rate, or 3% per year.

**Population growth begins to plateau after the planet reaches 25% capacity.**

**Order Now!**

Left-click on the Value for a description of how the value relates to your potential for growth on the selected planet.


---

**Learn more about**

[Population](#)

## Starbase Indicator

[Back to the Planet Summary](#)

 When this symbol appears, the planet has a starbase in orbit. Only a planet with a starbase can produce ships. A starbase is indicated in the Scanner by a yellow or blue dot in orbit of the planet. A yellow dot indicates the starbase can build ships. A blue dot indicates a starbase without ship building capability.

*Planet with  
a starbase.*



---

**Learn more about**

[Starbases](#)

## Environment Graph

[Back to the Planet Summary](#)



The Environment Graph displays the planet's gravity, temperature, and radiation levels. Left clicking on each of these factors displays an informative summary popup. The name is shown to the left of the graph, its value is shown to the right. The blue, red, and green bars represent the range your colonists find habitable. Your colonists are more reproductive in the center of the range, and less reproductive toward the edges. If the graph is missing a colored bar, it means that your colonists are immune to that factor.

The bright diamond in each bar shows the current level of gravity, temperature and radiation for that planet. If each diamond falls within the range, your race can survive on that planet. If you terraform the planet, you'll see the diamonds move closer to the center. If you possess terraforming technology, a line appears next to each diamond that your technology can shift. The end point of the line represents the maximum amount of terraforming you can perform with your current technology. A plus mark in the graph represents the original value of the factor if terraforming has been done.

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### Learn more about

[Terraforming](#)

## Mineral Content Graph

[Back to the Planet Summary](#)

**Order Now!**

This graph displays the quantity of each mineral on the planet. The bright colored bar shows the amount on the surface and ready for immediate use. The dark bar at the end of the bright bar shows how much you'll mine in the next year. The position of the diamond shows the density of that mineral under the surface, from one to 100. In the graph, a + (plus) sign indicates only that the mineral amount exceeds the current scale.

The scale along the bottom of the graph can be adjusted to focus on small mineral quantities or zoom out to get the big picture. Left-click on the scale to display a menu of available scales, then select a value.

Scanners will only detect the mineral concentration. You can't detect how much is available on the planet surface unless you colonize the planet. If the mineral concentration exceeds 100 units, the diamond appears at the right side of the graph. The units for mineral concentration are between 0 and 200; it is not a percentage.

**Tip:** If you can't see the dark bar, set the scale to a lower number, such as 1000.

**Order Now!**

Left-clicking on any mineral to display the exact amount of the mineral under the surface and on the surface, the rate at which the mineral is being mined, and the amount that will be mined in the coming year.

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**Learn more about**

[Minerals](#)

[Mining](#)

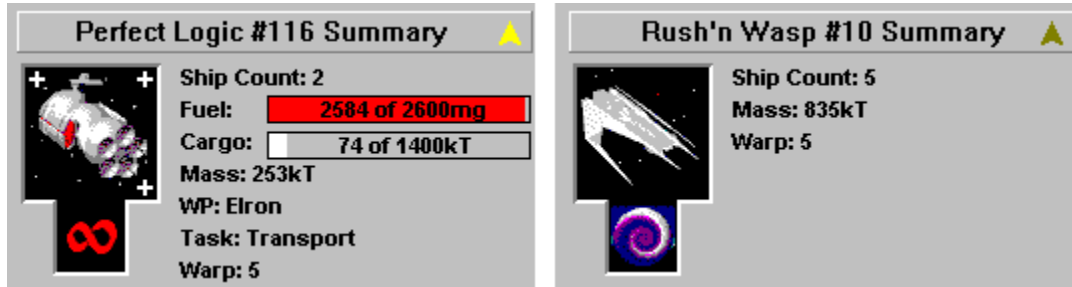


## Fleet Summary

### [The Rest of the Screen](#)

When you click on a fleet in the Scanner, the Summary pane displays what you know about the fleet. The picture in the tile indicates the dominant design of ship in the fleet. A small plus sign appears in the corners of the picture for each additional ship design in the fleet.

For your fleet, the number, ship count, fuel and cargo amount, fleet mass, next waypoint and waypoint task, and speed are shown.



For an opponent's fleet, the owner, number, ship count and mass are displayed.

If you are scanning an enemy fleet using a Robber Baron or Pick Pocket Scanner, the fuel and cargo gauges for the fleet are also displayed.

### **Order Now!**

Display a fleet's composition by left-clicking on the ship picture. Right clicking on the fleet picture pops up the hull design of the first ship type in the fleet. If you have met the enemy ship of that type in battle, Stars! displays the hull type. Left-clicking on the race icon displays the race name and associated player number.

### **Multiple objects indicator**

When this arrow is bright yellow, you have information about more than one of the objects at the selected location. Left-click on this arrow to display each object in turn or right-click and choose from a list of the objects here.

## Rainbow Effect

Some of the Stars! views are quite colorful. You'll probably decide quickly which views you will use for at-a-glance information (such as one of the mineral concentration views) and which you'll typically play in. Use the combination of overlays and filters that provides you with a consistently useful set of information, turning the others on and off as needed.

## Troubleshooting: What to Do when the Ship Hits the Fan

Here's a description of the problems customers and testers have reported and how you can resolve them. These problems are relevant to the current version. New troubleshooting information will be posted to the Stars! Web site at [www.webmap.com/stars!](http://www.webmap.com/stars!).

Scroll through this file. If you're having problems with Stars!, hopefully you'll find the answer here.

### **Cannot Open Game File errors**

**Problem:** You try to open a Stars! game, and receive an error message indicating the game file cannot be opened.

**Solution:** This may be caused by trying to open a game created with an older version of Stars!. Because of changes made to the current version in order to simplify and improve play, games generated by older versions will not run with the current version.

The game file may also be corrupted. Copy the previous turn from the backup directory, then rerun and submit the turn.

### **General Protection Fault error**

**Problem:** Stars! crashes with a General Protection Fault in XXX, where XXX has the number 256, 1024, or ends in DRV.

**Solution:** This error indicates an out-of-date Windows video driver. Contact your video card manufacturer or, possibly, Microsoft for an upgrade to the newest driver. Upgrading the driver has fixed all errors of this type that have been reported.

### **Shortcut Keystrokes don't always work**

**Problem:** Pressing a shortcut key does nothing.

**Solution:** Click on any tile that doesn't have a listbox, on a button in the Messages pane, or in the Scanner pane, then try the keystroke again.

### **"Partially Done" Turn message**

**Problem:** You're hosting a game and receive a message that a player has submitted a turn that is "partially done".

**Solution:** Go ahead and generate the new turn. The difference between the player's turn being marked as "done" or "partially done" is the submitted bit. When you save your turn you can choose Save, or Save and Submit. If you have used Save then the Host program considers the turn as "partially done". This is useful in network games when you want to save your work but don't want the host to Auto-Generate too soon. In a Play-By-Email games it doesn't matter because the turn is generated manually.

### **You Installed the Current Version, but an Older Version Appears when You Run Stars!**

**Problem:** You install the new version of Stars!, start it up, and the older version appears.

**Solution:** If you're currently running an instance of an older version of Stars!, Windows will always open another instance of that version. (This is standard Windows behavior). Close any Stars! sessions currently running and start the new version.

You CAN run different versions of Stars! simultaneously as long as each executable file has a different name.



## New Game (Quick Setup)

[More Stars! Dialogs](#)

The **File (New)** command opens the New Game dialog. There you choose basic options for a new game then let Stars! handle the details of Universe creation, or enter the advanced game setup dialog, or start the tutorial game:

[Difficulty Level](#)

[Begin Tutorial](#)

[Tiny Universe](#)

[Player Race](#)

[Small Universe](#)

[Advanced Game](#)

[Medium Universe](#)

[Large Universe](#)

[Huge Universe](#)

---

**Learn how to:**

[Start a Single Player Game](#)

## **Begin Tutorial**

If you select this option the tutorial game begins without further adieu. If you are new to Stars!, the tutorial will help you become a proficient player in 31 quick turns.

The tutorial game includes yourself and one computer player, or AI.

## **Difficulty Level**

Choosing a higher level increases the number and skill level of computer opponents. If you want to increase the number of opponents without raising their level of skill, just choose a larger universe size. At any difficulty level, a larger universe creates more opponents.

## **Tiny Universe**

400 light years in size. The tiny universe is only recommended for a 2 or 3 player game. Players will encounter each other very early.



**Small Universe**

800 light years in size. This universe will comfortably accommodate 4 players for an intimate game. If early encounters with other players are desired, 5 or 6 players can play in a small game.

## **Medium Universe**

1200 light years in size. This is a relatively large universe for 4 or fewer players, giving them plenty of room to expand. A full complement of 16 players can comfortably play a game in a medium universe, though early contact is likely with more than 12 players.

## **Large Universe**

1600 light years in size. This universe easily holds 16 players. Four or fewer players will often be able to build substantial empires before contacting another race.

## **Huge Universe**

2000 light years in size. This really, really big universe will allow even 16 players quite a bit of time to expand before running into other players. Since the huge universe can have up to 1000 planets, even 16 players could colonize about 60 planets each before needing to battle to expand their empires.

## **Player Race**

Open the dropdown list and choose a predefined race or select **Random** to let Stars! select a predefined race for you. This race only applies to the current game and is not saved across games. To create a saved race, [use the Custom Race Wizard](#).

For a description of the races provided with Stars!, visit the Web site at <http://www.webmap.com/stars!>.

## New Game (Advanced Setup)

[More Stars! Dialogs](#)

### **View Game Parameters Help**

View Game Parameters is a read-only version of the Advanced Game Wizard. Both dialogs contain the same information and display the same help.

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Open the New Advanced Game wizard by clicking on the **Advanced Game...** button in the **New Game dialog**. Use this wizard if you're setting up a multi-player game or want more control over the playing conditions in a single player game. The Advanced Game wizard has these steps:

[Step 1: Specify the Universe](#)

[Step 2: Specify the Players](#)

[Step 3: Specify Winning Conditions](#)

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### **Learn how to:**

[Host a Multi-Player Game](#)

## Step 1: Specifying the Universe (Advanced Setup)

[Other Advanced Setup Options](#)

[More Stars! Dialogs](#)

### New Advanced Game wizard / View Game Parameters dialog

Create the universe, using the following options:

<a href="#">Game Name</a>	<a href="#">Player Positions</a>
<a href="#">Tiny Universe</a>	<a href="#">Beginner: Unlimited Minerals</a>
<a href="#">Small Universe</a>	<a href="#">Slower Tech Advances</a>
<a href="#">Medium Universe</a>	<a href="#">Accelerated BBS Play</a>
<a href="#">Large Universe</a>	<a href="#">No Random Events</a>
<a href="#">Huge Universe</a>	<a href="#">Computer Players Form Alliances</a>
<a href="#">Density</a>	<a href="#">Public Player Scores</a>
	<a href="#">Galaxy Clumping</a>

When you complete this step, move on to specify the [number, types and races of the players](#).

**Game Name**

Keep the name Stars! offers or type in a name for your game. This name appears in the Stars! titlebar when the game is running.



## Density

Normal planet density in Stars! is approximately one planet for every 5000 l.y.<sup>2</sup>. That is, if you divided the universe up into squares 70 l.y.<sup>2</sup> on each side, there would on average be one planet in each square.

Selecting **Sparse** decreases density to approximately one planet for every 6500 l.y.<sup>2</sup>. Selecting **Dense** increases the density to approximately one planet for every 4000 l.y.<sup>2</sup>. Choosing **Packed** increases the density in number of planets by 30% over Dense in all but the Huge universe (which is stuffed as full as is playable by the Dense setting).

## **Player Positions**

This allows you to specify how close players start out relative to each other.

The result of these selections are affected by the number of players, the size of the universe and the density of the universe.

For instance, playing a 16 player game in a tiny universe severely restricts your chances for expansion, since a tiny universe typically has only 32 planets. More than two players in a tiny universe will be a very short game. You can increase the pace and length of a game in any size universe by selecting Dense in the planet Density box. You'll have more planets to colonize with short distances between them, and a rapid increase in resources and technological development.

If you want plenty of time get the feel of the game and to plan before you run into your opponent(s), choose **Distant** player positions.

**Beginner: Maximum Minerals**

The starting concentration of all minerals on every planet is 100. This option is for beginning players who don't want to deal with mineral shortages. Not recommended for advanced players, this option reduces the quality of advanced game play substantially.

### **Slower Tech Advances**

Choosing this option will make research twice as expensive. This will extend the game, making long-term strategy a more important element of play.

## **Accelerated BBS Play**

When you check this option, the following happens:

- ◆ Players start out with a population 4 times larger than normal.
- ◆ All planets have 20% more minerals.
- ◆ Planets with poor mineral densities are improved by a few percentage points.

This means you can build 5 to 10 ships your first turn, complete research up to 2 tech levels a year, and in general jump-start the game. You don't have to worry about running out of colonists if you want to send out a large number of colony ships early in the game.

In games started with this option you'll need to make many more decisions from turn 1 on. The first 10 turns accomplish what otherwise takes about 30 to 50 turns. These games usually have a winner emerging before turn 100. A disadvantage to this option is that some of the subtlety of Stars! is lost. You don't have to make as many of the early resource tradeoffs that have a large impact on your strategy later in the game. Most BBS gamers will find that this disadvantage is outweighed by the faster pace.

## **No Random Events**

This disables all random occurrences such as new mineral and artifact discoveries, comets, habitability shifts, and traders.

### **Computer Players Form Alliances**

Checking this box will cause the computer players to prefer attacking you over attacking each other. This will make the game significantly more difficult.

## **Public Player Scores**

All players' scores are displayed in the Score sheet (press F10) after the first 20 turns of the game. This gives players in games with this option time to disguise their races adequately.



## **Galaxy Clumping**


This clusters or clumps star systems, allowing for faster initial expansion.

## Step 2: Specifying the Players (Advanced Setup)

[Other Advanced Setup Options](#)

[More Stars! Dialogs](#)

### New Advanced Game wizard / View Game Parameters dialog

Click on the blue diamond  next to a player number. The menus that appear list the following options:

- Predefined Race** displays a list of all predefined races. Select a listed race or select **???Random???** to let Stars! design a new race to fill that position. Select **Expansion player** to create a random, potentially human controlled computer player that is currently inactive. The host may assign these player positions to players entering the game after it has started. Until that happens, the expansion players do generally passive things like conduct research.
- Custom Race** designs a new race or loads a custom race. Select **New...** to design and save a customized race, and add it to the game. Select **Open...** to add an existing custom race to the game.
- Edit Race...** appears only when a human controlled race is selected. Choosing this item takes you into the [Custom Race wizard](#).
- Computer Player** displays a list of all computer generated races. Select a race and a proficiency level.
- No Player** clears that position.

When you complete this step, move on to specify the [victory conditions](#).

### **Step 3: Winning Conditions (Advanced Setup)**

[Other Advanced Setup Options](#)

[More Stars! Dialogs](#)

#### **New Advanced Game wizard / View Game Parameters dialog**

Each of the values has a spinner next to it to adjust it. Select and modify as many conditions as you wish, then select the number of them that must be met for victory to be declared.

Multiple players can achieve victory at the same time (with the same or different conditions)

Once you're satisfied with the winning conditions, you can click on **Finish** and let the game begin.

Both the SHIFT and CTRL keys act as accelerators on this step.

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**To learn more about hosting Stars! read:**

[Hosting a Multi-Player Game](#)

## Custom Race wizard

[More Stars! Dialogs](#)

### View Race Help

The View Race dialog is a read-only version of the Custom Race wizard. Both dialogs contain the same information and thus display the same help.

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Here are the steps in creating your own player race. If you haven't defined a race before, finish reading this topic before you start clicking.

[Step 1: Basic Definition](#)

[Step 2: Primary Traits](#)

[Step 3: Secondary Traits](#)

[Step 4: Population Growth Factors](#)

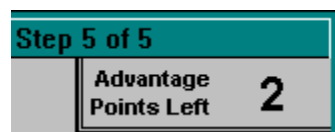
[Step 5: Population Efficiency](#)

[Step 6: Research Costs](#)

[Finish and Save](#)

The 6-step Custom Race wizard allows you to tailor the race you play in Stars!. Here, you define a race's strengths and weaknesses. The trick lies in balancing advantages with disadvantages in order to achieve a mix that makes the best use of the stuff of creation -- units of primordial ooze called advantage points.

In each step, the box in the upper right corner of the dialog shows the current number of unused advantage points.



With each advantage selected, the number decreases. Advantage points go down a little for slight advantages, and a lot for juicy ones. Before you finish, the number of advantage points must be greater than or equal to zero. When the number becomes negative and turns red, your race has missed the boat to Creationville. To get back in the black, select a few disadvantages (one of the catches of playing God).

Use the **Back** and **Next** buttons to move between steps while trying to compensate for your greedy ambitions.

**Note:** Choose your race attributes wisely. Once you begin the game, the race is yours for the duration. You can view your characteristics, but you won't be able to change them.

## **Step 1: Basic Definition (Player Race)**

[More Custom Race Steps](#)

[More Stars! Dialogs](#)

### **Custom Race wizard / View Race dialog**

Specify/view your race type, name and use of leftover advantage points:

[Race Name and Password](#)

[Predefined Races](#)

[Leftover Advantage Points -- Surface Minerals](#)

[Leftover Advantage Points -- Mines](#)

[Leftover Advantage Points -- Factories](#)

[Leftover Advantage Points -- Defenses](#)

[Leftover Advantage Points -- Mineral Concentration](#)

[Race Emblem](#)

Once you've set these basic parameters, go to step 2 and [specify the primary traits](#).

## **Race Name and Password**

Name your race and if you wish, choose a password. The password chosen when a race is created is attached to the race file. While you may change the password during the game, that change applies only to the current game. Opening that race file for use in another game will require proper entry of the original password. Also in order to open or view the race file, you need the password. You may specify a race name only here in step 1.

## Predefined Races

Selecting a predefined race automatically presets all of the options in steps 2 through 6. Choosing a predefined race doesn't prevent you from changing any option -- they are only provided as a time saver. Each predefined race has specific strengths and weaknesses you can use in determining your playing style and strategies.

Use the Custom Race wizard to learn about the pre-selected attributes for each predefined race and use a race as a starting point for one of your own:

1. Select a predefined race.
2. Use the **Back** and **Next** buttons to step through the wizard, noting the settings.
3. Go back to step 1 and select the predefined race that looked the best for your purposes.
4. Fine tune that race using as much of the wizard as necessary.

### **Leftover Advantage Points -- Surface Minerals**

You will get 10kT of surface minerals for each leftover advantage point. For example, if there are 20 unused points, you would receive a total of 200kT of minerals. Stars! weights the distribution in favor of the rarest minerals. These will be available immediately.



**Leftover Advantage Points -- Mines**

You will get one additional mine for every two leftover advantage points. These will be available immediately.

**Leftover Advantage Points -- Factories**

You will get one additional factory for every 5 leftover advantage points. These will be available immediately.

**Leftover Advantage Points -- Defenses**

You will get one additional defense installation for every 10 leftover advantage points. These will be available immediately.

### **Leftover Advantage Points Mineral Concentration**

The concentration of the mineral on your home world that would have been poorest is improved by 1% for every 3 leftover advantage points. Increasing the concentration increases the rate at which the mineral is mined (mining, of course, reducing the concentration over time).

## Race Emblem



Select a race emblem from the collection. This emblem identifies your fleets when they are displayed in the Selection Summary pane. In a multi-player game you may not get the emblem you select if another player chooses the same emblem.

## Step 2: Primary Traits (Player Race)

[More Custom Race Steps](#)

[More Stars! Dialogs](#)

### Custom Race wizard / View Race dialog

Choose the primary characteristics for your race. Each type gives you a specific and powerful set of strengths.

<a href="#">Hyper-Expansion</a>	<a href="#">Space Demolition</a>
<a href="#">Super-Stealth</a>	<a href="#">Packet Physics</a>
<a href="#">War Monger</a>	<a href="#">Interstellar Traveller</a>
<a href="#">Claim Adjuster</a>	<a href="#">Alternate Reality</a>
<a href="#">Inner-Strength</a>	<a href="#">Jack of All Trades</a>

Once you determine your primary traits, refine your race by [choosing lesser traits in step 3](#).

## **Hyper-Expansion**

[Other Primary Traits](#)

[Choosing Lesser Traits.](#)

[More Stars! Dialogs](#)

### **Starting Advantages**

- ◆ Growth rate is twice the value shown on step 4 of the Custom Race wizard.
- ◆ One armed scout
- ◆ Three mini-colony ships

### **Exclusive Hulls**

- ◆ Mini-Colonizer hull
- ◆ Meta Morph hull (completely flexible)

### **Exclusive Engines**

- ◆ Settler's Delight engine--Warp 6 for free, but only for Mini-Colonizer hull

### **Exclusive Components**

- ◆ Flux Capacitor increases the damage done by all beam weapons on Hyper-Expansion ships by 20%

### **Limitations**

- ◆ Cannot build stargates
- ◆ Maximum population limitation is  $\frac{1}{2}$  what the planet would normally support for a race with your environment requirements

## **Super-Stealth**

[Other Primary Traits](#)

[Choosing Lesser Traits.](#)

[More Stars! Dialogs](#)

### **Starting Advantages**

- ◆ Tech level 5 in Electronics
- ◆ One scout
- ◆ One colony ship

### **Exclusive Hulls**

- ◆ Rogue hull
- ◆ Stealth Bomber hull

### **Exclusive Components**

- ◆ Pick Pocket scanner that sees enemy fleet cargo in same location, allowing you to steal that cargo using the cargo gauge (and transfer dialog)
- ◆ Chameleon scanner with a scanning range of 160|45 plus a 20% cloak
- ◆ Robber Baron scanner that sees enemy fleet cargo and enemy planet surface minerals
- ◆ Shadow Shield with a strength of 75 plus a 35% cloak
- ◆ Depleted Neutronium with an armor strength of 200 plus a 25% cloak
- ◆ 75% Transport Cloak
- ◆ 85% Ultra-Stealth Cloak
- ◆ All ships and starbases built by Super-Stealth races have an inherent 75% cloak

### **Exclusive Abilities**

- ◆ Travel through opponent's mine fields at one warp speed faster than the limit stated in the Technology Browser
- ◆ Gain research by spying and combining it with your own research. Gain resources in each field equal to  $\frac{1}{2}$  the average spent in that field by all races (including yourself) while at least one other race exists



## **War Monger**

[Other Primary Traits](#)

[Choosing Lesser Traits.](#)

[More Stars! Dialogs](#)

### **Starting Advantages**

- ◆ Tech level 5 in Weapons
- ◆ Tech Level 1 in Propulsion and Energy
- ◆ One armed scout
- ◆ One colony ship

### **Exclusive Hulls**

- ◆ Battle Cruiser hull
- ◆ Dreadnought hull

### **Exclusive Weapons**

- ◆ Gatling Neutrino Cannon
- ◆ Blunderbuss

### **Exclusive Abilities**

- ◆ ½ square movement bonus in battle
- ◆ Colonists attack better
- ◆ All weapons cost 25% less to build
- ◆ Learns the exact design of enemy ships as soon as they are scanned

### **Limitations**

- ◆ Cannot build mine layers or lay minefields
- ◆ Can build SDI or Missile Battery defenses only

## **Claim Adjuster**

[Other Primary Traits](#)

[Choosing Lesser Traits.](#)

[More Stars! Dialogs](#)

### **Starting Advantages**

- ◆ Technology level 1 in Energy, Weapons and Propulsion, level 6 in Biotech
- ◆ Ship capable of terraforming other players' planets from orbit

### **Exclusive Components**

- ◆ Retro Bomb de-terraforms planets
- ◆ Orbital Adjuster modifies planet environmental conditions from orbit

### **Exclusive Weapons**

- ◆ Bombs that de-terraform worlds

### **Exclusive Abilities**

- ◆ Terraforming is free (and temporary). Each year all planets owned by you are terraformed to the limit of your terraforming technology. The planet reverts to its original condition if it is abandoned or captured by another player.

## **Inner-Strength**

[Other Primary Traits](#)

[Choosing Lesser Traits.](#)

[More Stars! Dialogs](#)

### **Starting Advantages**

- ◆ One scout
- ◆ One colony ship

### **Exclusive Hulls**

- ◆ Super Freighter hull
- ◆ Fuel Transport hull

### **Exclusive Components**

- ◆ Croby Sharmor shield strength 60 plus 65 dp as armor
- ◆ Fielded Kelarium armor strength 175 plus 50 dp as shield
- ◆ Speed Trap 20 mines--stops fleets cold
- ◆ Jammer 10 and Jammer 50 deflects torpedoes

### **Exclusive Weapons**

- ◆ Mini Gun power 13 range 1 sweeps mines at 208/year

### **Exclusive Components**

- ◆ Tachyon Detector, reduces the effectiveness of other players cloaks by 5%

### **Exclusive Abilities**

- ◆ Colonists defend better.
- ◆ Ships heal faster
- ◆ Planetary defenses cost 40% less
- ◆ Your colonists on freighters reproduce at ½ of their maximum rate, beaming down excess babies when orbiting a planet you own

### **Limitations**

- ◆ Weapons cost 25% more than they do for other races
- ◆ No Smart, Neutron, Enriched Neutron, Peerless or Annihilator bombs

## **Space Demolition**

[Other Primary Traits](#)

[Choosing Lesser Traits.](#)

[More Stars! Dialogs](#)

### **Starting Advantages**

- ◆ Tech level 2 in propulsion and biotech.
- ◆ One scout
- ◆ One colony ship
- ◆ Two mine layers (one standard, one speed trap)

### **Exclusive Weapons**

- ◆ Mine Dispenser 40, 80, 130 -- standard mines
- ◆ Heavy Dispenser 50, 110, 200 more serious fire power.
- ◆ Speed Trap 20, 30, 50 mines -- stops fleets cold

### **Exclusive Hulls**

- ◆ Mini Mine Layer hull
- ◆ Super Mine Layer hull

### **Exclusive Abilities**

- ◆ Mine fields act as non-penetrating scanners. Cloaks work as an absolute percentage against mine scans.
- ◆ Can travel through opponent's mine fields at two warp speeds faster than the limit stated in the Technology Browser
- ◆ Can remotely detonate standard minefields
- ◆ Mine fields decay at a rate of 1% a year per planet enclosed in the field. All other player's fields decay at 4% a year per planet enclosed.
- ◆ Learn the exact design of any enemy ship that detonates one of your mines

## **Packet Physics**

[Other Primary Traits](#)

[Choosing Lesser Traits.](#)

[More Stars! Dialogs](#)

### **Starting Advantages**

- ◆ Tech 4 in Energy
- ◆ Two shielded scouts
- ◆ One colony ship
- ◆ Two starting planets in non-tiny universes

### **Exclusive Components**

- ◆ Mass Driver 5, 6, 8, 9, 11, 12, 13
- ◆ Mineral packets with built-in penetrating scanners, with a range equal the square of their warp speed
- ◆ Energy Dampener slows all ships in combat by 4 initiative points

### **Exclusive Abilities**

- ◆ Mineral packets are smaller and cheaper to build
- ◆ Sense all players' mineral packets in flight, regardless of location
- ◆ Learn the exact design of any enemy starbase that uses a mass accelerator to receive a packet you fling
- ◆ Planets receiving mass packets have a 50% chance of a 1% improvement in an environmental attribute. For every 100kT of a mineral not caught, there is also a 0.1% chance of the overall planet value improving by 1%.

## **Interstellar Traveler**

[Other Primary Traits](#)

[Choosing Lesser Traits.](#)

[More Stars! Dialogs](#)

### **Starting Advantages**

- ◆ 2 planets with 100/250 stargates (in non-tiny universes only)
- ◆ Tech 5 in propulsion and construction.
- ◆ One scout
- ◆ One colony ship
- ◆ One destroyer
- ◆ One privateer

### **Exclusive Hulls**

- ◆ Stargates with unlimited range and capacity

### **Exclusive Components**

- ◆ Anti-matter Generator acts as a 200mg anti-matter fuel tank and generates 50mg of fuel every year

### **Exclusive Abilities**

- ◆ Can transport minerals and colonists in fleets through stargates. The cargo weight is not taken into account when determining the fleet weight versus the gate's limits.
- ◆ Exceeding the safety limits of stargates is less likely to kill your ships
- ◆ Stargates cost 25% less
- ◆ Stargates reveal planetary statistics on all other planets with stargates in range

### **Limitations**

- ◆ Mass drivers are only half as effective at catching minerals as their rating, are less efficient at flinging minerals, and all mineral packets that are flung will decay, regardless of speed.

## **Alternate Reality**

[Other Primary Traits](#)

[Choosing Lesser Traits.](#)

[More Stars! Dialogs](#)

### **Exclusive Hulls**

- ◆ The Death Star is the largest starbase hull ever known

### **Exclusive Components**

- ◆ Orbital Construction Module that contains viral weapons capable of killing 2000 enemy colonists per year and that colonizes worlds by transforming into an Orbital Fort

### **Exclusive Abilities**

- ◆ Lives on starbases only, not planets
- ◆ Starbases are 20% cheaper to build (non-cumulative with [Improved Starbases](#))
- ◆ Population acts as natural miners and scanners
- ◆ Remote mine own planets (since they live in orbit).
- ◆ Maximum population is determined by the size of the starbase, not the planet
- ◆ Planetary resources grow as Energy Tech Level increases

### **Limitations**

- ◆ Cannot build planetary installations
- ◆ Interstellar travel kills 3% of any colonists in the fleet per year

## **Jack of All Trades**

[Other Primary Traits](#)

[Choosing Lesser Traits.](#)

[More Stars! Dialogs](#)

### **Starting Advantages**

- ◆ Tech 3 in all fields
- ◆ Two scouts
- ◆ One colony ship
- ◆ One medium freighter
- ◆ One mini miner
- ◆ One destroyer

### **Exclusive Components**

- ◆ Scout, Frigate and Destroyer hulls get a built-in scanner with a range equal to  $2N / N$  light years, where  $N = 10 \times$  Electronics Tech level

### **Exclusive Abilities**

- ◆ Improves all Costs 75% Extra fields to tech level 4 if the box in step 6 is checked



### Step 3: Lesser Traits (Player Race)

[More Custom Race Steps](#)

[More Stars! Dialogs](#)

#### Custom Race wizard / View Race dialog

Specify/view the lesser traits for your race. You'll probably find several traits that won't affect your playing strategy. Each time you choose a trait that prevents you from developing something, you'll gain advantage points you'll be able to use elsewhere or, if you're in the hole, bring the balance closer to being above zero (you have to be above or at zero before you can click on Finish).

Select secondary traits that compliment the profile you chose in [step 2](#):

<a href="#">Improved Fuel Efficiency</a>	<a href="#">No Ramscoop Engines</a>
<a href="#">Total Terraforming</a>	<a href="#">Cheap Engines</a>
<a href="#">Advanced Remote Mining</a>	<a href="#">Only Basic Remote Mining</a>
<a href="#">Improved Starbases</a>	<a href="#">No Advanced Scanners</a>
<a href="#">Generalized Research</a>	<a href="#">Low Starting Population</a>
<a href="#">Ultimate Recycling</a>	<a href="#">Bleeding Edge Technology</a>
<a href="#">Mineral Alchemy</a>	<a href="#">Regenerating Shields</a>

When you finish, use step 4 to [specify your survival conditions and growth rate](#).

## **Improved Fuel Efficiency**

Your ships will burn 15% less fuel than what the drive specifications indicate. The Fuel Mizer and the Galaxy Scoop engines are also available. This trait also increases your starting tech in propulsion by one level.

## **Total Terraforming**

You begin the game with the ability to adjust each of a planet's environment attributes by up to 3% in either direction. Throughout the game, additional terraforming technologies not available to other players will be achievable, up to 30% terraforming. Total Terraforming requires 30% fewer resources.

### **Advanced Remote Mining**

Gives you three additional mining hulls and two new robots. You will start the game with two Midget Miners.

## **Improved Starbases**

Gives you two new starbase designs. The Space Dock hull allows you to build starbases which can in turn build small to medium ships. The Ultra-Station is much larger than a standard Starbase. Your starbases are automatically cloaked by 20%. Starbases will cost you 20% less to build.

## **Generalized Research**

Your race takes a holistic approach to research. Only half of the resources dedicated to research will be applied to the current field of research. 15% of the total will be applied to each of the fields. (Yes, we know this adds up to 115%.)

## Ultimate Recycling

When you scrap a fleet at a starbase, you recover 90% of the minerals and 70% of the resources used to produce the fleet. The resources are available for use the next year. Scrapping at a planet gives you 45% of the minerals and 35% of the resources.

These resources are not strictly additive. The number a planet receives is determined by the formula:

$$\frac{(\text{Current\_production} \times \text{Extra\_resources})}{(\text{Current\_production} + \text{Extra\_resources})}$$

## **Mineral Alchemy**

You will be able to turn resources into minerals more efficiently. One instance of mineral alchemy will use 25 resources to produce one kT of each mineral. Without this trait it takes 100 resources to produce one kT of each mineral.



## **No Ramscoop Engines**

You will not be able to build the Radiating Hydro-Ram Scoop, Sub-Galactic Fuel Scoop, Trans-Galactic Fuel Scoop, Trans-Galactic Super Scoop, Trans-Galactic Mizer Scoop or the Galaxy Scoop. You will be able to build the Interspace-10 engine, which can travel warp 10 without taking damage.

## **Cheap Engines**

**Pro:** Engines cost 50% less to build.

**Con:** Your ship engines aren't entirely reliable. When attempting to travel at speeds above warp 6, there is a 10% chance the engines will refuse to engage.

## **Only Basic Remote Mining**

No Robo-Miner, Robo-Maxi-Miner or Robo-Super-Miner robots or their corresponding .

## **No Advanced Scanners**

You will not have any standard scanners that can scan planets from a distance and see fleets hiding behind planets.

All ranges for conventional scanners are doubled.

## **Low Starting Population**

Instead of 25000 people, you start with 17500 (30% fewer). It takes a long time to overcome a lower starting population -- it helps to have a high growth rate, but even then it can be painful.

## **Bleeding Edge Technology**

New technologies initially cost twice as much to build. As soon as you exceed all of the tech requirements by one level, the cost drops back to normal. Miniaturization, the lowering of production costs, occurs at 5% per level, up to 80%. Without this trait miniaturization occurs at 4% and tops out at 75%.

## **Regenerating Shields**

All shields are 40% stronger than the listed [rating](#). Shields regenerate at 10% of the maximum strength after every round of battle. All armors are at 50% of their rated strength.

## **Step 4: Population Growth Factors (Player Race)**

[More Custom Race Steps](#)

[More Stars! Dialogs](#)

### **Custom Race wizard / View Race dialog**

Specify/view your race's habitable range and its growth rate under optimum conditions, using the following topics as guidelines:

[Growth Conditions](#)

[Maximum Population Growth](#)

When you know where and how you'll grow, go on to Step 5 and specify [how efficient your race is at running your empire](#).



## Growth Conditions

Use this dialog to specify how well your race tolerates gravity, temperature and radiation. The tolerances are set individually for each of the three environmental factors.




The width of the colored bar represents the extent of the habitable range. The width plus the position of the bar left or right determine the extremes of the habitable range. The numbers to the right of the bar show the extremes in either gravities (g), degrees Celsius (C) or millirads (mR).


Your race will grow only on planets with conditions that fall within the habitable ranges. On planets that are outside the habitable ranges, some colonists will die every year due to the unbearable conditions.

The gravity and temperature of every planet are picked at random, but are slightly weighted to favor values in the middle of the spectrum. If you move the colored bar away from the center, you will see the advantage points increase, compensating for the reduction in the number of habitable planets you will encounter. The radiation level of a planet is chosen completely at random.

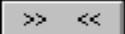
## Adjusting the Habitable Range

---

If you click on the  or

 buttons, the entire range moves left or right. Holding down the SHIFT key while clicking moves the range in steps. Click and hold the colored bar to drag it back and forth freestyle.

Clicking the  button widens the habitable range. Clicking the

 button narrows the habitable range. Holding down the Shift key while clicking narrows and widens the range in 20% increments.

## Choosing an Extreme Range

---

**Cons:** The more extreme your habitability range, the more planets will be out of your habitable and terraformable range.

**Pros:** You get back advantage points. Also, planets with environments near the ends of the spectrum have a good chance of being super-rich in one or more minerals. For example, a planet with a flesh-searing radiation extreme of 97mR could easily have four times the concentration of each mineral as a mild-mannered vacation world.

## Immunity

---



Selecting the **Immune to Radiation** checkbox allows you to ignore an environmental factor. This is very expensive and will require the selection of many disadvantages to bring advantage points back above zero. When you select immunity, the habitable range becomes irrelevant and disappears. If you select any kind of immunity, you may not want to spend points on the Total Terraforming advantage. Once you're in the game, you can research individual terraforming technologies that apply only to environmental factors that can affect you. If you are totally immune, you never need to terraform.

Selecting immunity is different than expanding the habitable range to fill the entire spectrum. Immunity treats every point in the spectrum as 100% ideal. A range widened to fill the spectrum treats only the mid-point as 100% ideal. The edges of the range are 0% ideal.

---

**Learn about:**


[Maximum Population Growth](#)

---

**Or take the next step:**

[Step 5: Specifying the Efficiency of Your Race.](#)

## Maximum Population Growth





Maximum colonist growth rate per year: 15% 

Set the maximum colonist growth rate between 1% and 20% per year. The colonists will grow at this rate only if the planet value is 100%. If the planet value is less than 100%, the colonist growth rate will fall proportionately.

For example:

Maximum colonist growth rate per year: 10% 

If your people decide to colonize Demski, a rock with a planetary value of 15%.

Demski Summary 	
Val: 15%	Pop: 2,500
Current	
Grav	 0.58g
Temp	 92°C
Rad	 27mR

Clicking on the Value in the Selection Summary pane for the planet Demski displays this popup:

Your population on **Demski** is **2500**.  
**Demski** will support a population of up to **150000** of your colonists.  
Your population on **Demski** will grow by up to 1.50% per year.

If you are immune to an environmental factor, every planet you explore will be 100% ideal for that factor. Immunity is expensive. You will have to choose many disadvantages in order to compensate and bring the advantage point value back above zero.

If you select both immunity to one or more environmental variables and the advantage of Total Terraforming, some or all of the points used to obtain the Total Terraforming advantage will be wasted.

---

### Learn about:

[Growth Conditions](#)

---

### Or take the next step:

[Step 5: Specifying the Efficiency of Your Race.](#)

## Step 5: Population Efficiency (Player Race)

[More Custom Race Steps](#)

[More Stars! Dialogs](#)

### Custom Race wizard / View Race dialog

Specify/view the efficiency of your colonists, mines and factories for all the planets you inhabit.

*Click on this type of  
button to increase  
or decrease a value.*

One resource is generated each year for every 10  colonists.

If you are confused about whether increasing or decreasing a value is providing an advantage, watch the advantage points box as you click on the controls. If the number of points decreases when you click on a control, you have given the race an advantage.

### **Order Now!**

If you have a race with a high population growth, you may not care about being efficient with factories. In this case you would set the controls so colonists produce fewer and more expensive factories, thereby freeing up advantage points to use somewhere else.

If you plan on building a only low number of mines, or if you have extra advantage points, consider increasing the mining production rate. This will NOT affect the rate at which the mineral concentration is reduced on your planets. It only makes you more efficient at squeezing minerals out of the rock. This can give you a competitive advantage over a player who operates more mines but is less efficient--they'll decrease their mineral concentration faster than you. The rate at which mineral concentration decreases (always stopping at 1) is determined by the number of mines on a planet and the number of years they've been in existence.

Keep in mind that when the mineral concentrations on both your planets and your opponent's planets reaches 1, the player with more mines can do as well, and possibly better, than the player who is very efficient at extraction. If you're very good at production and are creating resources like crazy, you may find you can easily make up for low mineral concentrations with [Mineral Alchemy](#).

These are only simple examples of possible strategies--make the choices that suit your game the best, keeping in mind the rules determining the rate at which mineral concentration is reduced.

Next you'll [specify the cost of research for your race](#).

If you choose the [Alternate Reality primary trait](#) most of these controls are disabled. Alternate Reality races can't build planetary installations.

---

### Learn more about:

[Mines, Mineral Concentration, and Player Efficiency](#)

## Step 6: Research Costs (Player Race)

[More Custom Race Steps](#)

[More Stars! Dialogs](#)

### Custom Race wizard / View Race dialog

Specify/view how efficiently your scientists use planetary resources in their research. Changes are reflected in the advantage points box in the upper-right corner of the dialog.

Selecting **Costs 75% extra** increases the available advantage points.

Selecting **Costs 50% less** decreases the available advantage points.

If you check **All 'Costs 75% extra' research fields start at Tech 3**, then it is to your advantage to have as many research fields 'Costs 75% extra' as makes sense, as this option costs a flat fee.

If you have chosen the Jack-of-All-Trades primary trait, this is '...start at Tech 4'

This is the last step. You can return to any of the others if you need to adjust your advantage points or [finish and save the race in a file](#).

## Finish and Save (Player Race)

[More Custom Race Steps](#)

[More Stars! Dialogs](#)

### Custom Race wizard only

When you click on **Finish**, Stars! verifies that you have created a valid race, asks you to reenter your password (if you have specified one), and then opens the **Save As** dialog.

1. Type a file name (for example, ***gump***).
2. Click **OK**.

The file name under which the race is stored can be different from the name you've given the race. However, you may wish to make some reference to the race name in the race filename to help you keep track of numerous saved races.

## Production dialog

[More Stars! Commands](#)

[More Stars! Dialogs](#)

Here you order a planet to build ships, defenses, factories, mines and starbases. You can also schedule terraforming and mineral alchemy. The list box on the left is the inventory of everything you know how to build; the list box on the right is the queue of items to be produced. The dialog tells you the cost of each item when you click on it, and how long it will take to produce the item. You can also create and apply production templates to automate adding items to the queue. Auto-build items (in italic) can be added so the queue is always busy.

---

### Adding and Removing Items in the Queue

To add an item to the production queue:

1. Click on the item in the left-hand list.
  2. Click on **Add** to add one of that item to the queue (right-hand list).
- ⇒ Remove an item by selecting an item in the queue, then clicking on Remove.
- ⇒ Move an item to a different place in the queue by clicking on the item in the queue, then clicking on Item Up or Item Down.
- ⇒ Clear the *entire* queue by clicking on **Clear**. Selecting **Cancel** undoes this action.

#### Keyboard Shortcuts

SHIFT-**Add/Remove** will add or remove 10 items at a time.

CTRL-**Add/Remove** will add/remove 100 items at a time.

CTRL+SHIFT-**Add/Remove** will add or remove as many of that item as possible.

These keystrokes also work if you double click on the item.

---

### Read more about the inventory and queue:

[Production Inventory](#)

[Production Queue](#)

---

### Previous and Next Queues

Each planet has its own production inventory and queue, accessed using the **Previous** and **Next** buttons.

The planet queues appear in the current sort order of the Planet Summary Report. You can change this order in the Planet Report. Open the report using the **Reports (Planets)** menu item.

---

### Apply or Define a Production Template

This option allows you to apply or customize an auto-build production template. A production templates represents auto-build production strategies you plan to use more than once. You can define the default production template to be used with any newly colonized planet and create up to three custom templates. Templates are saved for the duration of the game.

When you apply a template, ALL items currently in the queue are replaced with the auto-build items listed in the template.

---

### Contribute Only Leftover Resources to Research

Ordinarily, every planet devotes a percentage of their annual resources to research. Before any resources are used in production, this cream is skimmed off the top at the percentage set in the Research dialog's budget control. If the production queue empties or is blocked during a turn, leftover resources are also

funneled into research.

Selecting this option specifies that production gets top priority and the research budget gets only what production fails to use that year. This is important for fledgling colonies who need to build a basic infrastructure with meager resources.

This checkbox applies to only the current planet.

---

**Learn about:**

[Using Auto-build](#)

[Creating Production Templates](#)

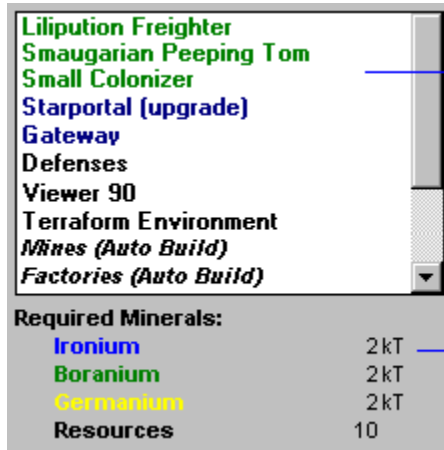
[Research](#)



## Production Inventory

[Production Queue](#)

[More Stars! Dialogs](#)



*Inventory list of everything the planet can build. Like items are displayed the same color.*

*Amount of each mineral and number of resources required to produce one of whatever is selected in the inventory.*

---

Learn about:

[Adding an Item to the Production Queue](#)

## Production Queue

[Production Inventory](#)

[More Stars! Dialogs](#)

--- Top of the Queue ---	
<b>Factory</b>	<b>10</b>
<b>Defenses</b>	<b>30</b>
<b>Lilipution Freighter</b>	<b>20</b>
<b>Destroyer</b>	<b>15</b>
<i>Max Terraform</i> Up to 1020	
<b>Required Minerals:</b>	
<b>Ironium</b>	20 kT
<b>Boranium</b>	20 kT
<b>Germanium</b>	20 kT
<b>Resources</b>	100
<b>0% Done, Completion 1 year</b>	

*Items currently awaiting production.*

*Quantity of each mineral and number of resources required to build selected item in the quantity shown.*

*Completion status of selected item.*

Items are produced in order, from top to bottom. The color of each item in the queue indicates the estimated time to completion:

- ◆ **Green** -- all will be produced this turn.
- ◆ **Blue** -- at least one, but not all, will be produced this turn.
- ◆ **Black** -- these items all require more than one turn to complete.
- ◆ **Red** estimated completion time is greater than 100 years.
- ◆ **Gray** item is not necessary this year and will be skipped.

**19% Done, Completion 1 year**

If you plan to clear the queue, **% done** helps indicate how many minerals and resources you'll lose for any item in production. All minerals and resources already put into a partially completed order will be lost if the queue is cleared.

For example, if the top item in the queue cost a total of 2000 resources and 1000 kT of minerals to build, and is 30% complete, when you clear the queue you'll lose 600 resources and 300 kT of minerals.

---

### Learn about:

[Adding an Item to the Production Queue](#)

## Customize Production Templates dialog

### [More Stars! Dialogs](#)

Use this dialog to create, modify or delete custom production templates. A production template is a common set of auto-build items you wish to build many times in a game, just by selecting the template name instead of adding the items manually to the production queue. You can define the default production template used for any newly colonized planet and create up to three custom templates for use on any planet. These templates are saved for the duration of the game.

**Import** -- Imports the auto-build items currently in the Production Queue into the template you select. The Rename Production Template dialog appears, allowing you to enter a new template name or use the existing name.

**Delete** -- Deletes the contents of the selected custom template.

**Rename** -- Opens the Rename Production Template dialog, allowing you to change the name of the selected order.

---

### Learn more about:

#### [Creating Production Templates](#)

## Ship and Starbase Designer

### [More Stars! Dialogs](#)

The Ship/Starbase Designer allows you to view, edit, and delete ship and starbase designs, and to create new designs as hull types and components become available through construction research.

**Existing Designs** displays your current hull types and component configurations.

**Available Hull Types** displays the hulls available to you at your current level of construction technology.

**Enemy Hulls** displays hull designs for enemy ships you have scanned, and component configurations for enemy ships you have battled.

**Components** displays an inventory of all available hull components.

---

### Other ship designer features you'll need to use:

#### [Hull Schematic](#)

#### [Hull Component List](#)

---

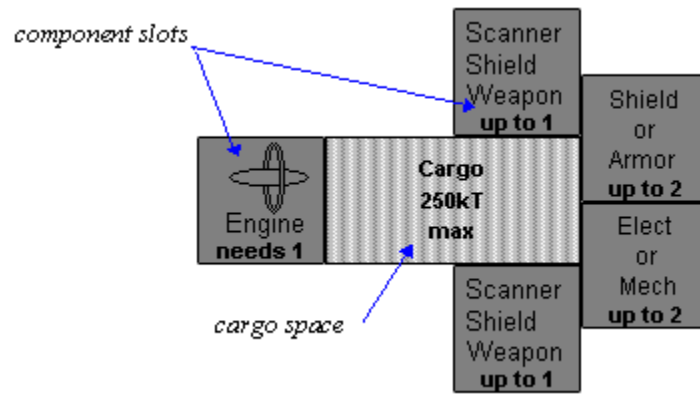
### You can also learn about:

#### [How to Design Ships](#)

## Hull Schematic

### [More Stars! Dialogs](#)

Hull schematics show the type and number of components a hull is designed to hold. The schematic is made up of component slots that only accept the type and number of components indicated by their labels. Cargo spaces only show cargo capacity -- they do not accept components.



The cost, mass, fuel capacity, shield and armor strengths, and other ship statistics are shown in the lower-right corner of the Ship Designer dialog. The values change as components are added or removed.

<b>Cost of one Juggernaut</b>			
<b>Ironium</b>	304kT	<b>Max Fuel:</b>	<b>2800mg</b>
<b>Boranium</b>	953kT	<b>Armor:</b>	<b>3650dp</b>
<b>Germanium</b>	354kT	<b>Shields:</b>	<b>1400dp</b>
<b>Resources</b>	991	<b>Rating:</b>	<b>18700</b>
<b>Mass: 1309kT</b>		<b>Cloak/Jam:</b>	<b>0%/0%</b>
		<b>Initiative/Moves:</b>	<b>18 / 1½</b>
		<b>Scanner Range:</b>	<b>54 / 20</b>

---

### Read about:

[Hull Component List](#)

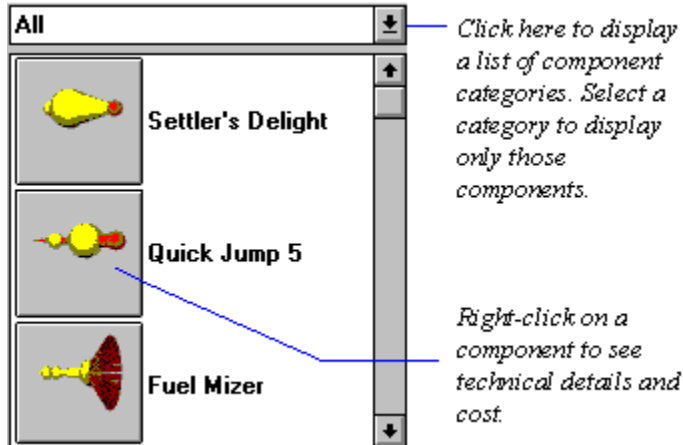
[How to Design Ships](#)

## Hull Component List

### [More Stars! Dialogs](#)

The hull component list is the parts inventory used to build or edit a hull. New components are automatically added to the list as construction research levels increase.

Selecting a component category from the dropdown list screens out all other components. This can save time when the list of all components becomes too long for a quick scroll.



When a component is selected, the cost and mass of the item are shown in the lower-left corner of the Ship Designer dialog.

<b>Cost of one Anti-Matter Pulverizer</b>	
<b>Ironium</b>	10kT
<b>Boranium</b>	80kT
<b>Germanium</b>	25kT
<b>Resources</b>	130
<b>Mass: 21kT</b>	

---

### Read about:

[Hull Schematic](#)

[How to Design Ships](#)

## Research dialog

### [More Stars! Dialogs](#)

The Research dialog displays research status and has the controls for setting the annual budget and the field of study. In the research dialog you can specify a research field, view expected technology benefits, estimate the time to completion for current research, specify a research sequence and adjust the annual research budget.

---

### **Read about these features:**

[Technology Status](#)

[Expected Research Benefits](#)

[Currently Researching](#)

[Resource Allocation](#)

## **Technology Status**

[Other Research dialog features](#)

[More Stars! Dialogs](#)

Technology Status shows your current level of achievement in each area of technology. Tech levels range from 0 to 26. For every tech level you achieve above the minimum required to produce an item, the cost of that item is reduced by 5% (continued technical advancements improves production, thereby lowering costs).

When you select a technology, research will continue in that field until you reenter the research dialog and change the field of study setting.



## Expected Research Benefits


[Other Research dialog features](#)

[More Stars! Dialogs](#)

Expected Research Benefits lists the items that further research in the selected field of study will make available. The color of each item indicates how many more levels of research are required to make that item available:

- ◆ **Green** -- will be available at completion of the current level.
- ◆ **Blue** -- will be available after 2 to 4 more levels.
- ◆ **Black** -- will be available after at least 5 more levels.

The levels of research required to build an item vary. Some items require only one level in one area, while others require several levels in two or more fields (for example, the Dolphin Scanner requires the following minimum tech levels: energy level 5, electronics level 10 and biotechnology level 4).

 When you move the cursor to an item in the list, the help cursor appears. Left click and hold to see the technical details and cost of that item.

## Currently Researching

[Other Research dialog features](#)

[More Stars! Dialogs](#)

Currently Researching shows the status of research in the selected field of study.

## Resources needed to complete

---

Resources needed to complete current research. If you invest more resources than are necessary to complete the current technology, the excess resource may be applied against the next level of the current research field or against a different field.

## Estimated time to completion

---

The years-to-completion number is based on values that change from year to year and is almost always conservative. The number cannot anticipate resource expansion due to population growth and construction, nor can it anticipate any resources freed when your production queues become empty.

## Next field to research

---

This automatically changes the field of research once you attain the technology level you're currently researching. Any resources not used that turn in researching the current field are applied to researching the next field. Selecting **Lowest Field** will automatically switch research to the field with the lowest level after each advance.

## Resource Allocation

[Other Research dialog features](#)

[More Stars! Dialogs](#)

Resource Allocation shows the detail of your current resource budget and allows you to adjust the percentage of available resources that are spent on research.

### **Annual resources from all planets**

---

Shows the total resources you have at your disposal.

### **Total resources spent on research last year**

---

Shows how many resources were actually spent on research last year. This can differ dramatically from last year's projected research budget due to uncalculated increases in productivity, population growth and leftover resources from planetary production queues.

### **Resources budgeted for research**

---

Specifies the amount of each planet's total resources to siphon off for research before allocating to production. (A planet with 100 resources will have only 85 resources available for production if the research percentage is set to 15%.)

Planets whose production queues are empty or blocked due to a shortage of minerals will automatically allocate all of their resources to research.



You may adjust the research percentage from 0% to 100%. Hold down the SHIFT key and left-click on the arrow buttons to raise or lower the number in 10% intervals.

### **Next year's projected research budget**

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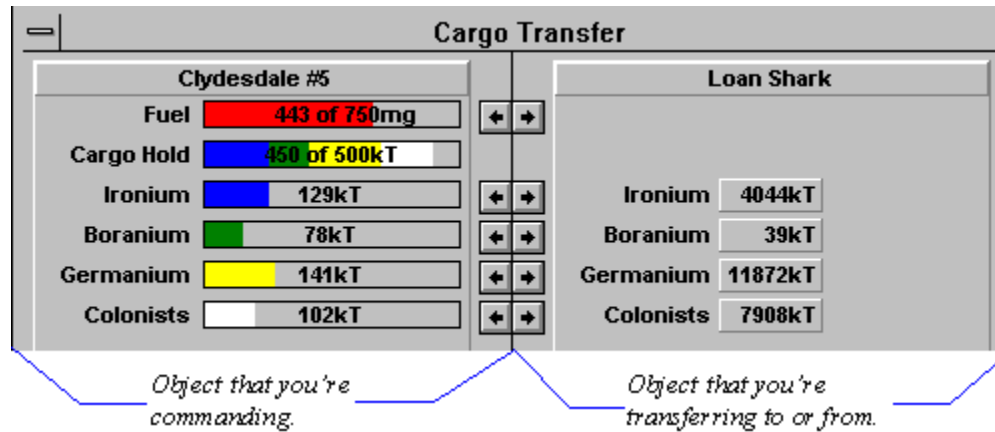
A conservative guess of how many resources will be invested in research in the coming year. (conservative unless you are currently being slaughtered by another player's bombers - then it may be liberal due to diminished output the next year on the planet(s) currently being attacked)

If the projected research budget does not seem to change when you adjust the budget % it means all of your production queues are blocked or empty.

## Cargo Transfer dialogs

### [More Stars! Dialogs](#)

The cargo transfer dialog enables you to transfer fuel, minerals and colonists from a planet to a fleet in orbit, from a fleet in orbit to a planet and from fleet to fleet. Transfers can be made to another player as well as between planets and ships you own.



All transfer dialogs work the same: the fleet or planet you are commanding is shown on the left half of the dialog, the fleet or planet you're transferring cargo to or from is on the right. The amount of cargo available for transfer on either object is shown in the gauges on both sides. If the object on the right belongs to an opponent, the gauges for that object will initially register zero.

---

### Learn more about a specific type of cargo transfer:

[Between Your Planet and Your Fleet](#)

[Between Your Fleet and a Planet](#)

[Between Your Fleets](#)

[Between Your Fleet and an Opponent's Fleet](#)

## Between Your Planet and Your Fleet

While commanding a planet, click on the **Cargo** button in the Fleets in Orbit tile of the Command pane.

The numbers on the planet side of the dialog represent the total planetary supply of minerals and colonists. To transfer cargo between your planet and your fleet, do one of the following:

- ⇒ Click in gauge next to the cargo name and drag.
- ⇒ Click on the arrows.

**Tip:** Shift-click to transfer cargo in units of 10. CTRL-click to transfer in units of 100.

## Between Your Fleet and a Planet

While commanding a fleet, click on the **Xfer** button in the planet tile or click on the Cargo gauge in the Fuel & Cargo tile.

The numbers on the planet side of the dialog represent the total planetary supply of minerals and colonists. The gauge labeled Cargo Hold shows the combined cargo weight.

To transfer cargo between your planet and your fleet, do one of the following:

- ⇒ Click in gauge next to the cargo name and drag.
- ⇒ Click on the arrows.

**Tip:** SHIFT-click to transfer cargo in units of 10. CTRL-click to transfer in units of 100.

## Between Your Fleets

While commanding a fleet, select another fleet in the Other Fleets Here tile, then either click on the **Cargo** button or click in the Cargo gauge.

The gauge labeled Cargo Hold shows the combined cargo weight.

To transfer cargo between your planet and your fleet, do one of the following:

- ⇒ Click in the gauge next to the cargo name and drag.
- ⇒ Click on the arrows.

**Tip:** SHIFT-click to transfer cargo in units of 10. CTRL-click to transfer in units of 100.

## Between Your Fleet and an Opponent's Fleet

While commanding a fleet, select an opponent's fleet from the Other Fleets Here tile, then either click on the **Cargo** button or in the Cargo gauge.

In this dialog, you are not able to see what the other player's fleet is currently holding. The gauges on the other player's side of the dialog start off at zero and increase to show only the amount you transfer to that fleet. If you later rendezvous with that fleet and they are still carrying all their cargo, you will still see only the amounts you transferred to them in their gauges.

The gauge labeled Cargo Hold shows the combined cargo weight.

**Note:** You can not transfer colonists to other player's fleets or planets. Their biology is incompatible with yours.

To transfer cargo between your planet and your fleet, do one of the following:

- ⇒ Click in the gauge next to the cargo name and drag.
- ⇒ Click on the arrows.

**Tip:** SHIFT-click to transfer cargo in units of 10. CTRL-click to transfer in units of 100.



## Ship Transfer dialog

[More Stars! Dialogs](#)

Use the ship transfer dialog to reassign ships to other fleets.

To transfer ships between fleets click on the arrows. The highlighted arrows show you which direction you can transfer ships.

## Battle Plans dialog

### [More Stars! Dialogs](#)

The Battle Plans dialog allows you to view or change the battle plans for a selected fleet. You can open the Battle plans dialog using the **Commands (Battle Plans...)** menu command or through the [Waypoint Task tile](#).

### Plan

---

Click on this dropdown to list and select from existing battle plans. Stars! provides several pre-defined battle plans to get you started. To learn the contents of a plan, select it from the list. Then look at the options chosen for target, tactics, and, if you're in a multi-player game, the victim. You can modify, rename or delete an existing plan, or copy it and use it as the basis for a new plan.

### Default Plans

---

New fleets are given a battle plan of Default. This plan sets up a default attack strategy if the fleet is armed, and a default flight strategy if the fleet is unarmed. You can't rename or delete the Default plan, but you can modify it.

### Tactics

---

Choose tactics to use on primary and secondary targets. A tactic applies to the entire fleet.

- ◆ **Disengage** -- Attempt to run away as soon as possible. Seven squares of movement on the [battle board](#) are required to leave the battle. As movement ranges from ½ square to 2 ½ squares per round it can take from 3 to 14 rounds to disengage.
- ◆ **Disengage if challenged** Behaves like Maximize damage until the token takes damage and then it behaves like Disengage.
- ◆ **Minimize damage to self** Attempt to move to the location from which this token can do the most damage to its target while taking the least damage from your enemies.
- ◆ **Maximize net damage** Attempt to get in range of the target class with all of your ship's weapons, then move in such a way as to always do some damage while maximizing damage\_done/damage\_taken.
- ◆ **Maximize damage ratio** Attempts to get in range of at least one ship of the target class and move in such a way as to do some damage while maximizing damage\_done/damage\_taken.
- ◆ **Maximize damage** Attempts to get in range of at least one ship of the target class with all your ships weapons, then tries to maximize the damage done. This tactic does not care about damage taken.
- ◆ **Dump Cargo** -- Jettison cargo at the start of battle.

Maximize Damage Ratio will not necessarily close to what may be considered the best location for your ship's weapons if it is carrying both short and long range weapons. For example, if you design a cruiser that carries range 6 missiles and a range 2 beam weapon, odds are that you will never get closer than range 6 in the battle. This is an advantage if when you want to use the short range weapons strictly as a deterrent against fast ships that try to get in close and destroy you with their short range weapons. If you do want to get closer and bring all weapons to bear, use Maximize Net Damage or Maximize Damage tactics.

### Targeting Options

---

You can specify both primary and secondary targets. If no target matching the primary target description is found, the fleet looks for the secondary target. Possible targets are:

- ◆ **None/Disengage** -- Don't look for a target, just attempt to disengage.
- ◆ **Any** -- Target any opponent's fleet you encounter.

- ◆ **Starbase** -- Target the opponent's starbase whether it is armed or unarmed.
- ◆ **Armed Ships** -- Target any ship or starbase carrying weapons (does not include bombers). Preference is given to the strongest tokens this token is likely to be able to hurt.
- ◆ **Bombers/Freighters** -- Target Bombers and Freighters only.
- ◆ **Unarmed Ships** -- Target any ship not carrying weapons or bombs.
- ◆ **Fuel Transports** -- Target Fuel Transports only.
- ◆ **Freighters** -- Target Unarmed Freighters only.

### **Specifying the Right Target**

---

Make sure your battle plan reflects what you really want your ships to do. For example, if you specify a target of Any and the closest ship happens to be an unarmed freighter instead of the enemy's battleships, you will waste a round destroying an easy target while the opponent's battleships pound you into space dust. In this case, choosing a target of Armed Ships would be much more appropriate.

### **Specifying which Players to Attack**

---

Attack Who specifies which players are targeted using this plan. In a multi-player game, the categories listed are defined in the [Player Relations dialog](#). In a solo game everyone is your enemy, and this field is disabled.

---

**Learn more about Combat in these topics:**

[The Basics of Combat](#)

[The Guts of Combat](#)

# Battle VCR

## More Stars! Dialogs

Use the VCR to replay a battle in which your fleet or the enemy's fleet took damage or were destroyed. The VCR displays each ship type involved in the battle on a grid, or battle board. Use the VCR control buttons to step back and forth through phases of the battle.

**Phase 21 of 46 Round 2 of 16**  
**Playback Speed: 4** [◀▶]  
**The Gylarians Defender** ← *Active (attacking or retreating) ships.*  
**attacks the Sectoids**  
**Nightstalker \* 19** ← *Ships being attacked are shown in red*  
**at (3, 4), doing 1088 damage to shields and 159 damage to armor.** ← *Damage detail.*

**SELECTION**  
*The selection details the active token during playback or any other token you click on.*  
**Selection: (1, 4)**  
**The Gylarians Defender**  
**Initiative: 21 Movement: 1**  
**Armor: 2580 Damage: (none)**  
**Shields: 1920**  
**Jamming: 20%**  
**Tactic: Maximize damage ratio**  
**Primary Target: Any**  
**Secondary Target: Any**  
 [?] ← *Click here to see the design details of the ship type displayed in the selection.*

*Blue frames the token detailed in the selection*

*Number of tokens at this location* → 6      12 ← *Total number of ships at this location*  
*Race Icon* → [Race Icon]

Start of Battle [⏪] [◀] [▶/||] [▶] [⏩] End of Battle  
*One Phase Back*      *Play Battle / Pause*      *One Phase Forward*

The ship displayed in a square represents one or more ships and is called a token. A token is a stack of identical ships from a single fleet--like a company of specialized soldiers within a larger army. The predominant ship type from that fleet is shown. In video modes of 800x600 or less a small plus sign appears for each token that is in the same location but not displayed. These plus signs can indicate other player's tokens as well as your own. In higher resolution video modes there are numbers in the upper right and left hand corners. The upper right hand number is the total number of ships at this location regardless from all tokens owned by any player. The number in the upper left hand corner contains the count of tokens at this location. If either number is 1 then the number is not displayed.

- ⇒ **Left-click on a ship token to select it.** The battle details tell you whether ships are attacking or fleeing, how fast they're moving, and whether they are taking damage. It also displays the tactic being employed by the active ship. This helps you figure out your opponents battle strategies.
- ⇒ **Right-click to display a list** of all the ship tokens at that location or keep left-clicking to cycle through

them.

For a more detailed description of what takes place in the VCR, read [About the Battle Board](#).

## Player Relations dialog

[More Stars! Dialogs](#)

### **Multi-player Games Only**

The Player Relations dialog determines your relationship to other players for the purpose of giving attack orders. You can open the Player Relations dialog using the **Commands (Player Relations...)** menu command or through the Waypoint Task tile.

### **One on One...**

---

In the Battle Plans dialog you can order an attack on a specific race or on combinations of races by grouping them under enemies. Specifying a player as a friend prevents you from selecting them under the neutral or enemies category when you specify a target. You can change your relationship with another player at any time during the game. The change takes effect immediately.

### **All for One...**

---

If you reach a waypoint and encounter a friend involved in a battle with a player you've marked as a neutral or an enemy, you'll be automatically pulled into the battle to help defend your friend. If both the battling players are marked as your friend, then you are not affected unless you choose to join the battle voluntarily.

Other attributes of friendship...

Players you specify as friends are immune to your minefields, are automatically refueled by your starbases, and can use your stargates. You won't sweep their minefields and your starbases will not initiate hostilities against them.

## Rename Fleet dialog

[More Stars! Dialogs](#)

Use this dialog to rename the fleet displayed in the Command pane. Just replace the text showing the fleet's current name with your own more descriptive label.

The R key also opens this dialog.

## Find Planet or Fleet dialog

### [More Stars! Dialogs](#)

Use this command to find a planet or fleet quickly.

#### **To find a planet**

⇒ Enter the name of the planet. Partial names comprised of the first few letters of the planet will work provided no two planets share those first letters. The more letters you type, the more accurate the search will be.

#### **To find a fleet of your own**

⇒ Enter the fleet number or name.

#### **To find another player's fleet**

⇒ Enter the fleet identification using this format:

race\_name #(fleet\_number).

Example: tritizoid #125



## Custom Zip Orders dialog

### [More Stars! Dialogs](#)

Use this dialog to create, modify or delete custom Zip Orders. A Zip Order is a common Transport order you wish to specify many times in a game, just by selecting the Zip Order name instead of filling out the [Waypoint Task tile](#). Stars! provides three pre-defined Zip Orders. You can't change the pre-defined orders in this dialog, but you can add to the list.

Once you create a Custom Zip Order, it's available in all your games until you delete it. Use the following buttons to create, modify and delete one:

**Import** -- Imports the Transport order in the Waypoint Task tile into the Zip Order chosen in this dialog. The Rename Custom Order dialog appears, allowing you to enter a new order name or use the existing name.

**Delete** -- Deleted the contents of the selected custom Zip Order.

**Rename** -- Opens the Rename Zip Order dialog, allowing you to change the name of the selected order.

---

### Learn about:

[Creating a Custom Transport Zip Order](#)

## Score sheet

### [More Stars! Dialogs](#)

Each asset a player controls is worth a certain number of points. The score sheet shows the current tally of points for each asset and how you fare against other players based on the point total. It also lists the victory conditions and shows how close you are to reaching them. If the host chose the [Public Player Scores](#) option during the game setup, score statistics for all players are shown after the first 20 turns have passed.

⇒ Click on **Switch** to toggle between the score/rank, victory conditions, and a history graph.

Here's how empires score:

<b>Planets</b>	1-6 points, scoring 1 point for each 100,000 colonists
<b>Starbases</b>	3 points each (doesn't include Orbital Forts)
<b>Unarmed Ships</b>	An unarmed ship has a power rating of 0. You receive 1/2 point for each unarmed ship (up to the number of planets you own).
<b>Escort Ships</b>	An escort ship has a power rating greater than 0 and less than 2000. You receive 2 points for each Escort ship (up to the number of planets you own).
<b>Capital Ships</b>	A Capital ship has a power rating of greater than 1999. For each capital ship, you receive points calculated by the following formula: $8 \times \#\_capital\_ships * \#\_planets / \#\_capital\_ships + \#\_planets$ For example, if you have 20 capital ships and 30 planets, you receive $(8 \times 20 \times 30) / (20 + 30)$ or 48 points for each ship.
<b>Tech Levels</b>	1 point for levels 1-3, 2 points for levels 4-6, 3 points for levels 7-9, 4 points for level 10 and above
<b>Resources</b>	1 point for every 30 resources

### History Graph

---

The history graph shows the last 100 years of data for each item on which you are scored. You will see only your own data if [Public Player Scores](#) was not selected at setup time.

⇒ Select different graphs by clicking on the blue diamond.

Score history information is stored in your history file (*gamename.h#*). If you delete this file, you will lose any accumulated score data.

Look for the players who appear to be scoring the highest, and the players who are increasing in strength faster than others. Note the areas in which they're doing well, and see if you can either ally yourselves with these players or find out where you should hit them the hardest.

**Note:** Score history information is saved in your [history file](#) (*gamename.h#*). If you delete this file, you will lose any score information you have accumulated.

---

### Learn about:

[Winning](#)

[Choosing Victory Conditions](#)

## Host Mode dialog

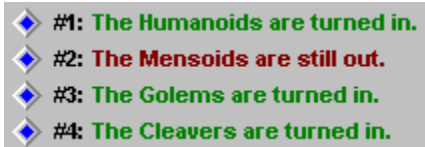
[More Stars! Dialogs](#)

### Multi-player Games Only

The host mode dialog is used only by the host of a multi-player game. The person acting as host can choose to manually or automatically generate a new turn when all players have submitted their turns.

### Roll Call

---

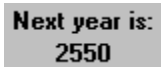


The upper-left corner of the dialog displays player status. Click on the blue diamond to learn whether a player is human or AI, and to change a human player from Active to Inactive. Once a player is inactive, a marginally competent AI takes over for the absent player to run his empire. When the player returns, click on the button again, selecting Active Player.

The dialog displays player's status as dead if they have been eliminated and no longer waits for a turn to be submitted by deceased players. The dialog also shows the status of players who have saved turn changes, but not marked their log file as turned in.

### One Step Ahead

---



The upper-right corner of the dialog displays the year of the next turn. All games start in the year 2400.

### Hurry Up and Wait

---



The amount of time since any change has been made, including the last time a player submitted or unsubmitted a turn, or when host mode was entered--any change made that would affect host mode.

### Stars! The Next Generation

---

⇒ Click on **Generate Now** to manually generate a new turn.

This forces the turn to be generated regardless of whether all players have submitted their turns. In network games, all turn data saved by each player who hasn't yet submitted changes is used.

All unsaved changes made in unsubmitted turns will be lost.

### Auto Pilot

---

Click on **Auto Generate** to tell Stars! to automatically generate turns when all players have submitted their changes.

Stars! will continue to poll the play directory, waiting for all players to submit their turns. If the Host Mode

dialog is visible, it will only poll the play directory to see which players have submitted turns and which players are out. It will not automatically generate the turns.

### **Changing the Host Password**

---

Click on **Password...** to create or change the host password. Player passwords are changed within the game. The password is limited to 16 characters.

---

#### **Learn about:**

[Hosting a Multi-Player Game](#)

## Change Password dialog

[More Stars! Dialogs](#)

### **Multi-player Games Only**

This dialog allows you to create a new password for your race or to change an existing one. The password is limited to 16 characters. Passwords are not effective until the next turn has been generated.

You can also [create a default password](#) using the **stars.ini** file.

## Merge Fleets dialog

### [More Stars! Dialogs](#)

Use this dialog to merge two or more fleets currently at the same location. If a fleet has at least one waypoint it will have a '\*' (asterix) after its name in the listbox. This helps you to select all the fleets not doing anything at a location.

To use the Merge Fleets dialog:

1. When commanding one of a number of fleets at the same location, click on the **Merge** button in the Fleet Composition tile.
2. Select any combination of fleets to merge and **OK** the dialog.

If the fleet under command is not selected to merge, the other selected fleets are merged into the fleet with the lowest ID number. If the fleet under command is selected, the other selected fleets are merged into it.

---

### Learn about:

### [Splitting and Merging Fleets](#)

## About Data Tables

### [More Guts](#)

These tables list statistics on each piece of technology available in Stars!. Use the following guide to determine the unit of measure for a statistic:

- ◆ If the category is a technology, such as Energy, the unit is in levels of technology successfully researched.
- ◆ If the category is weight or a mineral name, the unit is in kilotons (kT).
- ◆ dp or Dmg measure damage in points or percentage to a hull, people or surface installations.
- ◆ Range is number of squares on the battle board (displayed in the VCR).
- ◆ Fuel # indicates the percentage of standard fuel usage for that engine at the warp speed indicated by the number.
- ◆ Ability refers to different things for each type of technology. For a description of an ability, open the technology browser and view the page for that item.

**Here are the tables:**

[Armor](#)

[Orbital Devices](#)

[Beam Weapons](#)

[Planetary Installations](#)

[Bombs](#)

[Scanners](#)

[Electrical Devices](#)

[Shields](#)

[Engines](#)

[Ship Hulls](#)

[Mechanical Devices](#)

[Starbase Hulls](#)

[Mine Laying table](#)

[Terraforming](#)

[Mining](#)

[Torpedoes](#)

## Armor table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	DP
Tritanium	0	0	0	0	0	0	60	10	5	0	0	50
Crobnium	0	0	0	3	0	0	56	13	6	0	0	75
Carbonic Armor	0	0	0	0	0	4	25	15	0	0	5	100
Strobnium	0	0	0	6	0	0	54	18	8	0	0	120
Organic Armor	0	0	0	0	0	7	15	20	0	0	6	175
Kelarium	0	0	0	9	0	0	50	25	9	1	0	180
Fielded Kelarium	4	0	0	10	0	0	50	28	10	0	2	175
Depleted Neutronium	0	0	0	10	3	0	50	28	10	0	2	200
Neutronium	0	0	0	12	0	0	45	30	11	2	1	275
Valanium	0	0	0	16	0	0	40	50	15	0	0	500
Superlatanium	0	0	0	24	0	0	30	100	25	0	0	1500

## Beam Weapons table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Range	DP	Initiative
Laser	0	0	0	0	0	0	1	5	0	6	0	1	10	9
X-Ray Laser	0	3	0	0	0	0	1	6	0	6	0	1	16	9
Mini Gun	0	5	0	0	0	0	3	10	0	16	0	2	13	12
Yakimora Light Phaser	0	6	0	0	0	0	1	7	0	8	0	1	26	9
Blackjack	0	7	0	0	0	0	10	7	0	16	0	0	90	10
Phaser Bazooka	0	8	0	0	0	0	2	11	0	8	0	2	26	7
Pulsed Sapper	5	9	0	0	0	0	1	12	0	0	4	3	82	14
Colloidal Phaser	0	10	0	0	0	0	2	18	0	14	0	3	26	5
Gatling Gun	0	11	0	0	0	0	3	13	0	20	0	2	31	12
Mini Blaster	0	12	0	0	0	0	1	9	0	10	0	1	66	9
Bludgeon	0	13	0	0	0	0	10	9	0	22	0	0	231	10
Mark IV Blaster	0	14	0	0	0	0	2	15	0	12	0	2	66	7
Phased Sapper	8	15	0	0	0	0	1	16	0	0	6	3	211	14
Heavy Blaster	0	16	0	0	0	0	2	25	0	20	0	3	66	5
Gatling Neutrino Cannon	0	17	0	0	0	0	3	17	0	28	0	2	80	13
Myopic Disruptor	0	18	0	0	0	0	1	12	0	14	0	1	169	9
Blunderbuss	0	19	0	0	0	0	10	13	0	30	0	0	592	11
Disruptor	0	20	0	0	0	0	2	20	0	16	0	2	169	8
Syncro Sapper	11	21	0	0	0	0	1	21	0	0	8	3	541	14
Mega Disruptor	0	22	0	0	0	0	2	33	0	30	0	3	169	6
Big Mutha Cannon	0	23	0	0	0	0	3	23	0	36	0	2	204	13
Streaming Pulverizer	0	24	0	0	0	0	1	16	0	20	0	1	433	9
Anti-Matter Pulverizer	0	26	0	0	0	0	2	27	0	22	0	2	433	8



## Bombs table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Kill	Destroy
Lady Finger Bomb	0	2	0	0	0	0	40	5	1	20	0	0.6	0.2
Black Cat Bomb	0	5	0	0	0	0	45	7	1	22	0	0.9	0.4
M-70 Bomb	0	8	0	0	0	0	50	9	1	24	0	1.2	0.6
M-80 Bomb	0	11	0	0	0	0	55	12	1	25	0	1.7	0.7
Cherry Bomb	0	14	0	0	0	0	52	11	1	25	0	2.5	1.0
LBU-17 Bomb	0	5	0	0	8	0	30	7	1	15	15	0.2	1.6
LBU-32 Bomb	0	10	0	0	10	0	35	10	1	24	15	0.3	2.8
LBU-74 Bomb	0	15	0	0	12	0	45	14	1	33	12	0.4	4.5
Retro Bomb	0	10	0	0	0	12	45	50	15	15	10	0.0	0.0
Smart Bomb	0	5	0	0	0	7	50	27	1	22	0	1.3	0.0
Neutron Bomb	0	10	0	0	0	10	57	30	1	30	0	2.2	0.0
Enriched Neutron Bomb	0	15	0	0	0	12	64	25	1	36	0	3.5	0.0
Peerless Bomb	0	22	0	0	0	15	55	32	1	33	0	5.0	0.0
Annihilator Bomb	0	26	0	0	0	17	50	28	1	30	0	7.0	0.0

## Electrical Devices table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio- Tech	Mass	Resources	Ironium	Boranium	Germanium	Ability
Transport Cloaking	0	0	0	0	0	0	1	3	2	0	2	300
Stealth Cloak	2	0	0	0	5	0	2	5	2	0	2	70
Super-Stealth Cloak	4	0	0	0	10	0	3	15	8	0	8	140
Ultra-Stealth Cloak	10	0	0	0	12	0	5	25	10	0	10	540
Battle Computer	0	0	0	0	0	0	1	6	0	0	15	20
Battle Super Computer	5	0	0	0	11	0	1	14	0	0	25	30
Battle Nexus	10	0	0	0	19	0	1	15	0	0	30	50
Jammer 10	2	0	0	0	6	0	1	6	0	0	2	10
Jammer 20	4	0	0	0	10	0	1	20	1	0	5	20
Jammer 30	8	0	0	0	16	0	1	20	1	0	6	30
Jammer 50	16	0	0	0	22	0	1	20	2	0	7	50
Energy Capacitor	7	0	0	0	4	0	1	5	0	0	8	10
Flux Capacitor	14	0	0	0	8	0	1	5	0	0	8	20
Energy Dampener	14	0	8	0	0	0	2	50	5	10	0	-4
Tachyon Detector	8	0	0	0	14	0	1	70	1	5	0	-5
Anti-matter Generator	0	12	0	0	0	7	10	10	8	3	3	200



## Mechanical Devices table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio- Tech	Mass	Resources	Ironium	Boranium	Germanium	Ability
Colonization Module	0	0	0	0	0	0	32	10	12	10	10	0
Orbital Construction Module	0	0	0	0	0	0	50	20	20	15	15	20
Cargo Pod	0	0	0	3	0	0	5	10	5	0	2	50
Super Cargo Pod	3	0	0	9	0	0	7	15	8	0	2	100
Fuel Tank	0	0	0	0	0	0	3	4	6	0	0	250
Super Fuel Tank	6	0	4	14	0	0	8	8	8	0	0	500
Maneuvering Jet	2	0	3	0	0	0	5	10	5	0	5	1
Overthrunder	5	0	12	0	0	0	5	20	10	0	8	2
Beam Deflector	6	6	0	6	6	0	1	8	0	0	10	-10

## Mine Laying table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Mines/Year
Mine Dispenser 40	0	0	0	0	0	0	25	45	2	10	8	40
Mine Dispenser 50	2	0	0	0	0	4	30	55	2	12	10	50
Mine Dispenser 80	3	0	0	0	0	7	30	65	2	14	10	80
Mine Dispenser 130	6	0	0	0	0	12	30	80	2	18	10	130
Heavy Dispenser 50	5	0	0	0	0	3	10	50	2	20	5	50
Heavy Dispenser 110	9	0	0	0	0	5	15	70	2	30	5	110
Heavy Dispenser 200	14	0	0	0	0	7	20	90	2	45	5	200
Speed Trap 20	0	0	2	0	0	2	100	60	30	0	12	20
Speed Trap 30	0	0	3	0	0	6	135	72	32	0	14	30
Speed Trap 50	0	0	5	0	0	11	140	80	40	0	15	50

## Mining table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	kT/Year
Robo-Midget Miner	0	0	0	0	0	0	80	50	14	0	4	5
Robo-Mini-Miner	0	0	0	2	1	0	240	100	30	0	7	4
Robo-Miner	0	0	0	4	2	0	240	100	30	0	7	12
Robo-Maxi-Miner	0	0	0	7	4	0	240	100	30	0	7	18
Robo-Super-Miner	0	0	0	12	6	0	240	100	30	0	7	27
Robo-Ultra-Miner	0	0	0	15	8	0	80	50	14	0	4	25
Orbital Adjuster	0	0	0	0	0	6	80	50	25	25	25	0

## Orbital Devices table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Resources	Ironium	Boranium	Germanium	Ability 1	Ability 2
Stargate 100/250	0	0	5	5	0	0	400	100	40	40	100	250
Stargate any/300	0	0	6	10	0	0	500	100	40	40	0	300
Stargate 150/600	0	0	11	7	0	0	1000	100	40	40	150	600
Stargate 300/500	0	0	9	13	0	0	1200	100	40	40	300	500
Stargate 100/any	0	0	16	12	0	0	1400	100	40	40	100	0
Stargate any/800	0	0	12	18	0	0	1400	100	40	40	0	800
Stargate any/any	0	0	19	24	0	0	1600	100	40	40	0	0
Mass Driver 5	4	0	0	0	0	0	140	48	40	40	5	0
Mass Driver 6	7	0	0	0	0	0	288	48	40	40	6	0
Mass Driver 7	9	0	0	0	0	0	1024	200	200	200	7	0
Super Driver 8	11	0	0	0	0	0	512	48	40	40	8	0
Super Driver 9	13	0	0	0	0	0	648	48	40	40	9	0
Ultra Driver 10	15	0	0	0	0	0	1936	200	200	200	10	0
Ultra Driver 11	17	0	0	0	0	0	968	48	40	40	11	0
Ultra Driver 12	20	0	0	0	0	0	1152	48	40	40	12	0
Ultra Driver 13	24	0	0	0	0	0	1352	48	40	40	13	0

## Planetary Installations table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio- Tech	Resources	Ironium	Boranium	Germanium	Ability
Viewer 50	0	0	0	0	0	0	100	10	10	70	50
Viewer 90	0	0	0	0	1	0	100	10	10	70	90
Scoper 150	0	0	0	0	3	0	100	10	10	70	150
Scoper 220	0	0	0	0	6	0	100	10	10	70	220
Scoper 280	0	0	0	0	8	0	100	10	10	70	280
Snooper 320X	3	0	0	0	10	3	100	10	10	70	320
Snooper 400X	4	0	0	0	13	6	100	10	10	70	400
Snooper 500X	5	0	0	0	16	7	100	10	10	70	500
Snooper 620X	7	0	0	0	23	9	100	10	10	70	620
SDI	0	0	0	0	0	0	15	5	5	5	10
Missile Battery	5	0	0	0	0	0	15	5	5	5	20
Laser Battery	10	0	0	0	0	0	15	5	5	5	24
Planetary Shield	16	0	0	0	0	0	15	5	5	5	30
Neutron Shield	23	0	0	0	0	0	15	5	5	5	38



## Scanners table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Range
Bat Scanner	0	0	0	0	0	0	2	1	1	0	1	0
Rhino Scanner	0	0	0	0	1	0	5	3	3	0	2	50
Mole Scanner	0	0	0	0	4	0	2	9	2	0	2	100
DNA Scanner	0	0	3	0	0	6	2	5	1	1	1	125
Possum Scanner	0	0	0	0	5	0	3	18	3	0	3	150
Pick Pocket Scanner	4	0	0	0	4	4	15	35	8	10	6	80
Chameleon Scanner	3	0	0	0	6	0	6	25	4	6	4	160
Ferret Scanner	3	0	0	0	7	2	2	36	2	0	8	185
Dolphin Scanner	5	0	0	0	10	4	4	40	5	5	10	220
Gazelle Scanner	4	0	0	0	8	0	5	24	4	0	5	225
RNA Scanner	0	0	5	0	0	10	2	20	1	1	2	230
Cheetah Scanner	5	0	0	0	11	0	4	50	3	1	13	275
Elephant Scanner	6	0	0	0	16	7	6	70	8	5	14	300
Eagle Eye Scanner	6	0	0	0	14	0	3	64	3	2	21	335
Robber Baron Scanner	10	0	0	0	15	10	20	90	10	10	10	220
Peerless Scanner	7	0	0	0	24	0	4	90	3	2	30	500

## Shields table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	DP
Mole-skin Shield	0	0	0	0	0	0	1	4	1	0	1	25
Cow-hide Shield	3	0	0	0	0	0	1	5	2	0	2	40
Wolverine Diffuse Shield	6	0	0	0	0	0	1	6	3	0	3	60
Croby Sharmor	7	0	0	4	0	0	10	15	7	0	4	60
Shadow Shield	7	0	0	0	3	0	2	7	3	0	3	75
Bear Neutrino Barrier	10	0	0	0	0	0	1	8	4	0	4	100
Gorilla Delagator	14	0	0	0	0	0	1	11	5	0	6	175
Elephant Hide Fortress	18	0	0	0	0	0	1	15	8	0	10	300
Complete Phase Shield	22	0	0	0	0	0	1	20	12	0	15	500

## Ship Hulls table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Fuel	Cargo	DP	Initiative
Small Freighter	0	0	0	0	0	0	25	20	12	0	17	130	70	25	0
Medium Freighter	0	0	0	3	0	0	60	40	20	0	19	450	210	50	0
Large Freighter	0	0	0	8	0	0	125	100	35	0	21	2600	1200	150	0
Super Freighter	0	0	0	13	0	0	175	125	45	0	21	8000	3000	400	0
Scout	0	0	0	0	0	0	8	10	4	2	4	50	0	20	1
Frigate	0	0	0	6	0	0	8	12	4	2	4	125	0	45	4
Destroyer	0	0	0	3	0	0	30	35	15	3	5	280	0	200	3
Cruiser	0	0	0	9	0	0	90	85	40	5	8	600	0	700	5
Battle Cruiser	0	0	0	10	0	0	120	120	55	8	12	1400	0	1000	5
Battleship	0	0	0	13	0	0	222	225	120	25	20	2800	0	2000	10
Dreadnought	0	0	0	16	0	0	250	275	140	30	25	4500	0	4500	10
Privateer	0	0	0	4	0	0	65	50	50	3	2	650	250	150	3
Rogue	0	0	0	8	0	0	75	60	80	5	5	2250	500	450	4
Galleon	0	0	0	11	0	0	125	105	70	5	5	2500	1000	900	4
Mini-Colony Ship	0	0	0	0	0	0	8	3	2	0	2	150	10	10	0
Colony Ship	0	0	0	0	0	0	20	20	10	0	15	200	25	20	0
Mini Bomber	0	0	0	1	0	0	28	35	20	5	10	120	0	50	0
B-17 Bomber	0	0	0	6	0	0	69	150	55	10	10	400	0	175	0
Stealth Bomber	0	0	0	8	0	0	70	175	55	10	15	750	0	225	0
B-52 Bomber	0	0	0	15	0	0	110	280	90	15	10	750	0	450	0
Midget Miner	0	0	0	0	0	0	10	20	10	0	3	210	0	100	0
Mini-Miner	0	0	0	2	0	0	80	50	25	0	6	210	0	130	0
Miner	0	0	0	6	0	0	110	110	32	0	6	500	0	475	0
Maxi-Miner	0	0	0	11	0	0	110	140	32	0	6	850	0	1400	0
Ultra-Miner	0	0	0	14	0	0	100	130	30	0	6	1300	0	1500	0
Fuel Transport	0	0	0	4	0	0	12	50	10	0	5	750	0	5	0
Super-Fuel Xport	0	0	0	7	0	0	111	70	20	0	8	2250	0	12	0
Mini Mine Layer	0	0	0	0	0	0	10	20	8	2	5	400	0	60	0
Super Mine Layer	0	0	0	15	0	0	30	30	20	3	9	2200	0	1200	0
Nubian	0	0	0	26	0	0	100	150	75	12	12	5000	0	5000	2
Meta Morph	0	0	0	10	0	0	85	120	50	12	12	700	300	500	2

## Starbase Hulls table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Resources	Ironium	Boranium	Germanium	Dock Capacity	DP	Initiative
Orbital Fort	0	0	0	0	0	0	80	24	0	34	0	100	10
Space Dock	0	0	0	4	0	0	200	40	10	50	200	250	12
Space Station	0	0	0	0	0	0	1200	240	160	500	-1	500	14
Ultra Station	0	0	0	12	0	0	1200	240	160	600	-1	1000	16
Death Star	0	0	0	17	0	0	1500	240	160	700	-1	1500	18

## Terraforming table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio- Tech	Resources	Ability
Total Terraform ±3	0	0	0	0	0	0	70	3
Total Terraform ±5	0	0	0	0	0	3	70	5
Total Terraform ±7	0	0	0	0	0	6	70	7
Total Terraform ±10	0	0	0	0	0	9	70	10
Total Terraform ±15	0	0	0	0	0	13	70	15
Total Terraform ±20	0	0	0	0	0	17	70	20
Total Terraform ±25	0	0	0	0	0	22	70	25
Total Terraform ±30	0	0	0	0	0	25	70	30
Gravity Terraform ±3	0	0	1	0	0	1	100	3
Gravity Terraform ±7	0	0	5	0	0	2	100	7
Gravity Terraform ±11	0	0	10	0	0	3	100	11
Gravity Terraform ±15	0	0	16	0	0	4	100	15
Temp Terraform ±3	1	0	0	0	0	1	100	3
Temp Terraform ±7	5	0	0	0	0	2	100	7
Temp Terraform ±11	10	0	0	0	0	3	100	11
Temp Terraform ±15	16	0	0	0	0	4	100	15
Radiation Terraform ±3	0	1	0	0	0	1	100	3
Radiation Terraform ±7	0	5	0	0	0	2	100	7
Radiation Terraform ±11	0	10	0	0	0	3	100	11
Radiation Terraform ±15	0	16	0	0	0	4	100	15

## Torpedoes table

[More tables](#)

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Mass	Resources	Ironium	Boranium	Germanium	Range	DP	Initiative	Hit Chance
Alpha Torpedo	0	0	0	0	0	0	25	5	9	3	3	4	5	0	35
Beta Torpedo	0	5	1	0	0	0	25	6	18	6	4	4	12	1	45
Delta Torpedo	0	10	2	0	0	0	25	8	22	8	5	4	26	1	60
Epsilon Torpedo	0	14	3	0	0	0	25	10	30	10	6	5	48	2	65
Rho Torpedo	0	18	4	0	0	0	25	12	34	12	8	5	90	2	75
Upsilon Torpedo	0	22	5	0	0	0	25	15	40	14	9	5	169	3	75
Omega Torpedo	0	26	6	0	0	0	25	18	52	18	12	5	316	4	80
Anti Matter Torpedo	0	11	12	0	0	21	8	50	3	8	1	6	60	0	85
Jihad Missile	0	12	6	0	0	0	35	13	37	13	9	5	85	0	20
Juggernaut Missile	0	16	8	0	0	0	35	16	48	16	11	5	150	1	20
Doomsday Missile	0	20	10	0	0	0	35	20	60	20	13	6	280	2	25
Armageddon Missile	0	24	10	0	0	0	35	24	67	23	16	6	525	3	30

## The Guts of Combat

### [More Guts](#)

Here's some information to help you understand the behavior of fleets in battle. You may find it useful in planning battle strategies. It may also satisfy your drive to collect Stars! military trivia.

### [About the Battle Board](#)

### [Armor, Shields and Damage](#)

### [Damage Repair](#)

### [Weapons and Battle Devices](#)

### [Movement, Initiative and Firing in Battle](#)

## About the Battle Board

[More Battle Details](#)

[More Guts](#)

The battle board is the grid you see in [the Battle VCR](#). The fleets are distributed on the board as tokens. Each token is a stack of identical ships from a single fleet. The individual tokens move around the board targeting enemy tokens, following the tactics specified in their battle plan. Each location can contain any number of tokens.

Battles last up to 16 rounds. One round of battle is each token getting a chance to move and fire. A round is broken into phases, where one phase is a single token moving or firing.

Each round has three parts:

- ◆ First, all tokens target an enemy token that best meets their battle plan criteria.
- ◆ Second, all ships move, in order from heaviest to lightest. Ships' weights are randomly adjusted by up to 15% each turn, giving ships that are nearly identical a chance to alternate going first. All ships that can move three squares this round move one square first, then all ships that can move two squares move one square, then all ships that can move at least one square move a square.
- ◆ Third, weapons fire, in order from highest [initiative](#) to lowest.



## Armor, Shields and Damage

[More Battle Details](#)

[More Guts](#)

Read this section with the section on [Weapon Properties](#) for a fuller understanding of how armor, shields, and specific weapon types interact.

### Armor and Shields

---

Hulls have a base armor value. Additional armor is added to this value.

Shields will take damage and fail before enemy weapons attack your armor. In a [token](#), the shields overlap. For example, if your fleet has 20 scouts with shields valued at 20 each, you have a pool of 400 shields points that must be destroyed before the armor on any of those ships is damaged--unless your opponent is using torpedoes. Torpedoes damage both shields and armor, taking shield points and armor points from the token with each successful attack.

Shields are at full strength at the start of each battle. This means if you leave a battle one turn and enter a battle the next turn, your shields will be back at full strength. If you have the [Regenerating Shields trait](#) then your shields will regenerate 10% of their base value at the start of every round.

If you are using beam weapons and the damage your token can inflict on an enemy's token is more than enough to destroy the enemy token, the remainder is used on additional enemy tokens in the same location, limited only by the number of ships in the attacking token. For example, one token does a total of 1000 dp of beam weapon damage. The primary target is destroyed after taking 500 damage. If there are 10 other tokens at the same location, each consisting of a single ship with 150 dp of armor 3 of them would be destroyed and one would take 33% damage. If those 10 tokens had been a single token of 10 ships they would have still lost 3 ships but each of the remaining 7 ships would have taken less than 5% damage. If the ships had 100 dp armor and 50 dp shields each, then stacked together the shields would have absorbed all 500dp and no ships would have been lost. No combination of shields and armor would have saved those 3 ships with each ship in a separate token.

### Damage

---

Damage is applied as follows: If the damage applied to a token's armor exceeds the remaining armor of one or more of the ships in the token, then those ships are destroyed. Any remaining damage is spread over the ENTIRE token, with the damage being divided up equally among the remaining ships.

A separate damage value is stored for each token in the battle. Stars! stores the percentage of ships in the token that are damaged, along with the percentage of damage to each ship.

Damage is displayed as C @ P%, where C is the count of damaged tokens in a fleet and P is the percentage of damage inflicted. For example, 10@33% says that 10 tokens are one-third damaged.

For the type of damage inflicted by beam weapons and torpedoes, read about [Weapons and Battle Devices](#).

## Weapons and Battle Devices

[More Battle Details](#)

[More Guts](#)

Read this section with the section on [Armor, Shields and Damage](#) for a fuller understanding of how armor, shields and specific weapon types interact in Stars!.

## Weapons and Starbases

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All weapons mounted on Starbases get +1 added to their range.

## Beam Weapons

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Beam weapons always hit their target, but decay in strength at a rate of 10% pro-rated over their maximum range. For example, a weapon that will do 100 dp to a target in the same square and has a maximum range of 3 will only do 94 dp to a target two squares away. All damage from beam weapons is applied to shields first. Any damage not absorbed by the shields is applied to armor.

If an attacking token has more than one ship and its beam weapon strike destroys the target token, then the remaining damage is applied to other tokens in the same square. The maximum number of tokens targeted is the number of ships in the attacking token.

The following beam weapon information is provided for comparison purposes. See the Beam Weapons section of the Technology browser for the exact statistics of a specific weapon.

### Normal Beam Weapons

Damage: From 10 to 430 damage points

Range: From 1 to 3 squares

Initiative: From 5 to 9

### Range 0 Weapons

Damage: From 90 to 600 damage points

Range: Same square only

Initiative: 12

### Gatling Weapons

Damage: From 13 to 200 damage points

Range: 2 squares

Initiative: 12 to 13

These are extremely powerful weapons that hit every enemy token in their range each time they fire. They also [sweep minefields](#) as if they were range 4.

### Shield Sappers

Damage: From 82 to 541 damage points

Range: 3

Initiative: 14

These medium range weapons are very powerful but are only useful against shields. They have no effect on armor. They do have a higher initiative than any other weapon. This means that they will take out the enemy shields before your other weapons fire.

Shield Sappers cannot perform minesweeping.

### Minesweeping

Each beam weapon automatically sweep up to (Damage x Range x Range) mines per year.

## **Torpedoes**

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Each torpedo fired has a chance of missing. For example: If a token has two ships, each with a weapon slot holding 2 normal torpedoes, then a single shot fires all 4 torpedoes. Each torpedo has a chance to hit or miss according to its accuracy value. Normal torpedoes have an accuracy of 75%, which means that it is likely that 3 of the 4 torpedoes would hit.

Torpedoes that hit their primary target apply half of their damage directly to the armor of the target token. The other half of the damage is applied to the shields. Any damage that isn't absorbed by the shields is applied to the armor.

The maximum number of ships that can be killed by a torpedo strike is the number of torpedoes that hit. So in the preceding example the strike can kill up to 3 ships. If the target token has one ship in it and the hits caused more damage than was necessary to destroy it, then the damage is applied to other tokens in the same square. This type of damage is applied first to the shields; any damage not absorbed by the shields is applied to the armor. In no case can the number of ships destroyed exceed the number of torpedoes that hit.

Torpedoes that miss do collateral damage to the target token only. Collateral damage is 1/8th of the normal damage of the torpedo and works much like a Shield Buster beam weapon. In other words it only affects shields.

Torpedo accuracy can be improved using Battle Computers. Jammers can decrease the accuracy of enemy torpedoes.

The following torpedo information is provided for comparison purposes. See the Torpedoes section of the Technology Browser for the exact statistics of a specific weapon.

### **Normal Torpedoes**

Damage: From 5 to 300 damage points

Range: From 4 to 5 squares

Initiative: from 0 to 4

Accuracy: 35% to 80%

### **Capital Ship Missiles**

Damage: From 85 to 525 damage points

Range: From 5 to 6 squares

Initiative: From 0 to 3

Accuracy: 20% to 30%

These powerful torpedoes do more damage than normal torpedoes and have a longer range than any other weapon. Due to the poor accuracy and the fact that a single torpedo can take out at most one enemy ship, these missiles are best mounted on starbases and battleships with a lot of Battle Computers. Their ideal use is against large ships and starbases.

Capital ship missiles do twice the stated damage if the enemy ship has no remaining shields.

## **Jammers**

---

Jammers decrease torpedo accuracy. The Jammer 10 and 50 are available to Inner Strength players only. Jammer strength is additive. For example, a ship with three 20% Jammers reduces a normal torpedo's 75% accuracy by 20% three times:

$$75 \times .8 \times .8 \times .8 = 38\% \text{ torpedo accuracy}$$

See the Electrical section of the Technology Browser for a descriptions of each Jammer.

## **Battle Computers**

---

These devices increase the initiative of all weapons on the ship. The three different devices range from +1 to +3 initiative. They also decrease torpedo inaccuracy by 20 to 50%.

Decreasing the inaccuracy of a torpedo by a percentage is not the same as increasing the accuracy by that percentage. As torpedo accuracy becomes higher it becomes harder to improve it.

### **Computing the effect of a battle computer:**

**Example 1:** A normal 75% accurate torpedo fired using a 50% battle computer.

Incorrect calculation:  $75\% \times 1.5 = 112\%$  accuracy.

**Correct calculation:**  $100 - ((100 - 75) \times .5) = 88\%$  accuracy.

**Example 2:** A normal torpedo's 75% accuracy is modified by two 30% battle computers by decreasing its inaccuracy 30% twice.  $100 - ((100 - 75) \times .7 \times .7) = 88\%$  torpedo accuracy.

If the attacking token has battle computers and the target has jammers the devices cancel each other out on a 1% to 1% basis.

Further examples:

- ◆ Target token has Jammers totaling a 50% decrease in accuracy. Attacker's battle computers add up to a 45% decrease in inaccuracy. Result: 5% decrease in accuracy.
- ◆ Target token has Jammers totaling a 30% decrease in accuracy. Attacker's battle computers add up to a 40% decrease in inaccuracy. Result: 10% decrease in inaccuracy.

### **Energy Dampener**

---

This device slows down ALL ships in the entire battle board by 1 square of movement per round, for the duration of the battle. This is true even if the ship carrying the Dampener is destroyed before the end of the battle (the device has a lasting affect). The effect is not additive, so there is no advantage or penalty for having more than one Dampener in a battle.

### **Capacitors**

---

Increase the damage caused by all beam weapons on board by a percentage. Capacitor values run from 10% to 20%. The maximum additional percentage increase in damage caused by multiple capacitors is 250%.

#### **Example:**

A ship has a beam weapon capable of 100 damage and three 10% capacitors.

$$100dp \times 1.1 \times 1.1 \times 1.1 = 133dp$$

## Damage Repair

[More Battle Details](#)

[More Guts](#)

If after a battle your fleet has one or more ship types listed in red in the [Fleet Composition tile](#), then you have taken damage. Click on a red ship name to display how much damage has been done.

Ship repair restores the armor value, at an annual percentage based on the ship's location:

<b>Ship location</b>	<b>Annual rate</b>
Moving through space.	1%
Stopped in space.	2%
Orbiting but not bombing an opponent's planet.	3%
Orbiting a planet you own, with a space dock.	20%
Orbiting a planet you own, with a starbase but not a space dock.	8%
Orbiting a planet you own that doesn't have a starbase:	5%
Orbiting a planet you're bombing.	no repair
Stopped or orbiting, with at least one Fuel Transport hull in the fleet.	additional 5%
Stopped or orbiting, with at least one Super Fuel Xport hull in the fleet.	additional 10%

For example, a ship with a base of 25 damage points (dp) plus armor with a value of 75 dp has a maximum armor value of 100 dp. It takes 10 dp of damage, it would take 2 years in deep space, or one year in orbit, to fully repair the armor.

If you're orbiting an opponent's planet and your fleet has Attack orders, repairs will not happen. Repairs also do not happen during the year a fleet is [using a stargate](#).

During the years the starbase is under attack, the fleet will be repaired as if the starbase was not present.

## Fuel Transport/XPort Hull Advantage

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Notice that the table shows an advantage of using the Fuel Transport and Xport hulls: they repair other ships in the fleet, as well as collecting fuel. You only need one Fuel Transport hull in the fleet to gain the 5% increase in the repair rate, or one Super Fuel Xport to see a 10% increase. Adding extra Transport or Xport hulls doesn't increase the rate. And you always see the gain provided by the more advanced hull. Thus, if you have both Fuel Transport and Super Fuel Xport hulls in the same fleet, you gain only the 10% increase provided by the Super Fuel Xport hull.

## Starbase Repair

---

For ordinary players, starbases are repaired at a rate of 10% a year. For players with the

Inner Strength trait, starbases are repaired at 15% a year.

## Movement, Initiative and Firing in Battle

[More Battle Details](#)

[More Guts](#)

### Movement

---

Movement ranges from 1 to 8 squares on the battle board. Movement is always between  $\frac{1}{2}$  and  $2\frac{1}{2}$  squares per round.

The distance a ship can move per round is computed in  $\frac{1}{4}$  squares, using the following formula:

#### The Formula for Movement

$$\begin{aligned} \text{Movement} = & (\text{Ideal\_Speed\_of\_Engine} - 4) / 4 \\ & - \text{weight} / 70 / 4 / \text{Number\_of\_Engines} \\ & + \frac{1}{4} \times \text{Number\_of\_Maneuvering\_Jets} \\ & + \frac{1}{2} \times \text{Num\_Overthrusters} \end{aligned}$$

When you calculate the formula for movement and other formulas, remember that all multiplies and divides happen before any addition or subtraction.

#### Movement in Squares per Round

	<u>Round</u>							
<b>Movemen t</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
$\frac{1}{2}$	1	0	1	0	1	0	1	0
$\frac{3}{4}$	1	1	0	1	1	1	0	1
1	1	1	1	1	1	1	1	1
$1\frac{1}{4}$	2	1	1	1	2	1	1	1
$1\frac{1}{2}$	2	1	2	1	2	1	2	1
$1\frac{3}{4}$	2	2	1	2	2	2	1	2
2	2	2	2	2	2	2	2	2
$2\frac{1}{4}$	3	2	2	2	3	2	2	2
$2\frac{1}{2}$	3	2	3	2	3	2	3	2

#### Order of Movement

Movement happens in three phases:

Phase 1: All tokens that can move 3 squares this round get to move 1 square.

Phase 2: All tokens that can move 2 or more squares this round get to move 1 square.

Phase 3: All tokens that can move this round get to move 1 square.

In each part tokens move in order from heaviest to lightest, with a margin of +/- 15%.

Each token attempts to find the best square to move into that matches the tactic they've been assigned. For example, you have selected Maximize Net Damage and have a ship with a combination of range 1 and 2 weapons. Your enemy has a ship with a combination of range 1 and 2 weapons also, but their range 1 weapons are much better than yours. You will stay at range 2 because that is where you will do the highest net damage.

#### Overthrusters, Maneuvering Jets and Movement

Multiple Overthrusters and Maneuvering Jets are additive. One Overthruster gives the token a speed bonus of  $\frac{1}{2}$  square of movement per round, with each extra Overthruster adding  $\frac{1}{2}$  square.

A Maneuvering Jet gives the token an extra  $\frac{1}{4}$  square of movement per round of battle, with each extra Jet adding  $\frac{1}{4}$  square.

Maximum movement is  $2\frac{1}{2}$  squares per round, regardless of how many Overthrusters and Maneuvering Jets the design may have.

## **Firing**

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Weapons fire in order from highest to lowest initiative. Weapons fire on a weapon slot-by-weapon slot basis, the shortest range weapons of a given initiative firing first. If the target token is destroyed, damage will stream over to other tokens in range.

## **Initiative**

---

Initiative determines the firing order in battle. All ships have an innate hull initiative value, ranging from 0 to 18. Each battle computer increases initiative by 1, 2 or 3 points. Firing initiative is the sum of the hull initiative, battle computers, race modifiers (if you have the [War Monger trait](#)) and the weapon's initiative.

Highest initiative fires first. If a ship has a base initiative of 11 and beam weapons with an initiative of 5 for a total initiative of 16, and a second ship has a base initiative of 14 and a torpedo weapon with an initiative of 3 for a total initiative of 17, the second ship fires first. If the torpedo ship also had a second weapon with an initiative of 1 then the torpedo would fire first, the other ship's beams would fire, followed by the torpedo ship's second weapon.



# The Guts of Cloaking

## [More Guts](#)

In order for matter to be cloaked, it requires a certain number of cloaking units per kT. When a ship is empty, its cloak provides the maximum amount of cloaking possible with that device. When the ship has cargo, the weight of the cargo reduces the number of cloak units per kT, and thus, the cloaking percentage.

### **Cloaking when the Ship is Empty**

---

To determine the total number of cloaking units for an unladen ship, read the following table:

<b>Cloaking Device</b>	<b>Cloak Units/kT</b>	<b>Max Cloaking %</b>
Transport Cloak*	300	75
Stealth Cloak	70	35
Super-Stealth Cloak	140	55
Ultra-Stealth Cloak*	540	85
Shadow Shield*	70	35
Depleted Neutronium Armor*	50	25
Chameleon Scanner*	40	20

\* Available only to [Super Stealth races](#).

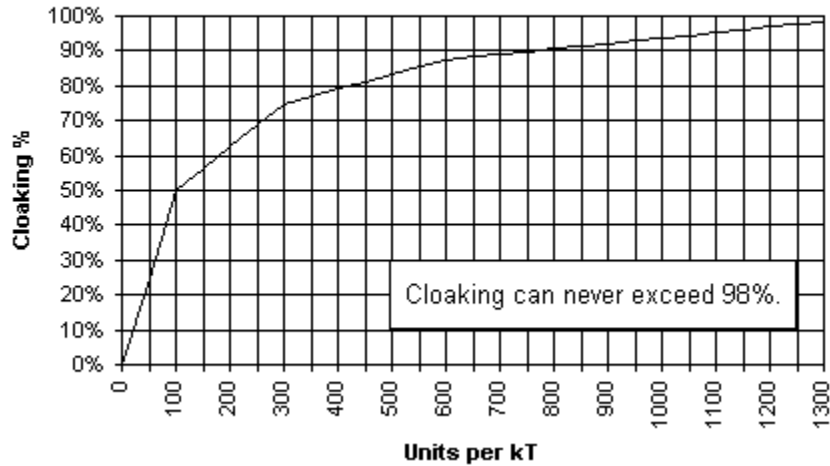
For example, an empty ship with a Stealth Cloak has 70 cloak units/kT, or 35% cloaking. By itself, the ship is visible to enemy scanners at only 35% of their maximum range.

When a cloaked ship has cargo, we need to recalculate the number of cloak units/kT available. Let's say this ship is a small freighter with a Quick Jump 5 engine, Tritanium Armor, and a Stealth Cloak. Empty, it weighs 91kT, with 70 cloak units/kT, and is cloaked at 35%. If you completely fill this particular freighter with cargo, it weighs 161kT. To calculate the new cloaking percentage:

1. Calculate the total number of cloaking units for the ship:  
$$\frac{\text{Max\_cloak\_units/kT} \times \text{Ship\_mass\_empty}}{\text{Ship\_mass\_empty}} = 70 \text{ units/kT} \times 91\text{kT} = 6370 \text{ total cloak units}$$
2. Calculate the actual units/kT:  
$$\frac{\text{Total\_units}}{\text{Ship\_mass\_with\_cargo}} = \frac{6370}{161 \text{ kT}} = \sim 40 \text{ units/kT}$$

We can use the following chart to learn how much coverage a given number of cloaking units provides.

## Cloaking Percentage w/s Units per kT



At 40 cloak units/kT, the loaded freighter in our example is now only 20% cloaked.

The following table provides exact numbers at certain points on the graph, allowing for more precise calculations.

100 units/kT	50% cloaked
300 units/kT	75% cloaked
600 units/kT	87.5% cloaked
1000 units/kT	93.75% cloaked

### Cloaking for a Fleet with More than One Ship

---

In a fleet with more than one ship, uncloaked ships are counted as cargo when calculating units/kT. Let's place our empty freighter in a fleet with an empty scout that has a Quick Jump 5 engine, Laser, and a Bat Scanner, which weighs 15kT when empty. The entire fleet weighs 106kT, so traveling together, this fleet would be  $6370 / 106 = \sim 60$  units/kT, approximately 30% cloaked.

Super Stealth races do not count the cargo when determining cloaking.

### The Effect of Multiple Tachyon Detectors

---

When a hull has more than one Tachyon Detector in its design, the effectiveness is calculated as follows:

$$95\% \wedge (\text{SQRT}(\#\_of\_detectors)) = \text{Reduction in other player's cloaking}$$

### The Appendix of Cloaking

---

Heres pseudo code you can use to determine cloaking percentage from cloaking points per kT.

```

if points <= 100
    percent = point/2
else
    points = points-100
    if points <= 200
        percent = 50+_points/8
    else

```

```
points = points-200
if points <= 312
  percent = 75+_points/24
else
  points = points-312
  if points <= 512
    percent = 88+_points/64
  else if points < 768
    percent = 96
  else if points < 1000
    percent = 97
  else
    percent = 98
  end if
end if
end if
end if
```

# The Guts of Minefields

[More about Minefields](#)

[More Guts](#)

## Types of Mines

### Normal

---

Effect: Blows up.

Maximum safe speed: Warp 4

Damage/ship: 100 (125 for ramscoops) for each engine

Minimum fleet damage: 500 points (600 for ramscoops)

Probability of hitting one: 0.3% per light year traveled for each warp over the safe speed.

Example: A fleet traveling Warp 9 has a 1.5% chance per light year traveled in a turn.

Traveling 10 light years through the minefield that turn, the fleet has a 10.5% chance of triggering a mine.

### Heavy

---

Effect: Blows up.

Maximum safe speed: Warp 6

Damage/ship: 500 (600 for ramscoops)

Minimum fleet damage points: 2000 (2500 for ramscoops)

Probability of hitting one: 1% per light year traveled for each warp over the safe speed.

Example: A fleet traveling Warp 9 has a 3% chance per light year traveled in a turn.

Traveling 10 light years through the minefield that turn, the fleet has a 30% chance of triggering a mine.

### Speed Trap

---

Effect: Halts the fleet, does no damage.

Maximum safe speed: Warp 5

Damage/ship: none

Minimum fleet damage: none

Probability of hitting one: 3% per light year traveled for each warp over the safe speed.

Example: A fleet traveling Warp 9 has a 15% chance per light year traveled in a turn.

Traveling 10 light years through the minefield that turn, the fleet is going to trigger a mine.

## Detecting Minefields

### Cloaked value of minefields:

---

Penetrating Scanners: 0%

Non-Penetrating Scanners: 82%

### Conditions for detecting an opponent's minefield:

---

You can see both the center and radius of an opponent's minefields if:

- ◆ the center of the minefield is in range of your penetrating scanner, **OR**
- ◆ You have hit the minefield at least once and the center is in range of your normal scanners **OR**
- ◆ You are IN the mine field.

## Ship Cloak Effectiveness in Minefields

When a ship is in a minefield, its cloak effectiveness is always an absolute value (90% cloak = 10% chance of detection).

## **Racial Traits and Minefields**

### **Special Capabilities**

---

**Space Demolition:** Minefields act as normal scanners but do not detect fleets orbiting planets.

### **Mine Dispensers Available by Race**

---

#### **Space Demolition:**

Mine Dispenser 40 (lays 40/year)

Mine Dispenser 50 (lays 50/year), available to all except War Monger

Mine Dispenser 80 (lays 80/year)

Mine Dispenser 130 (lays 100/year)

Heavy Dispenser 50 (lays 50/year)

Heavy Dispenser 110 (lays 110/year)

Heavy Dispenser 200 (lays 200/year)

Speed Trap 20 (lays 20/year), requires Space Demolition or [Inner-Strength](#).

Speed Trap 30 (lays 30/year)

Speed Trap 50 (lays 50/year)

**Inner Strength:** Mine Dispenser 50 and Speed Trap 20

**War Monger:** War Monger races can't lay mines. No mine dispensers of any type for these bloodthirsty minions.

**All Other Races:** Mine Dispenser 50 only

# The Guts of Mass Drivers

[More Guts](#)

## Damage Potential of Mineral Packets

So you always wondered exactly what sort of damage a mineral packet was capable of doing?

Mineral packets can be flung at speeds from Warp 5 to 3 Warp levels above the drivers rated speed. Exceeding the rated speed will form unstable packets that will disintegrate and lose minerals as they travel. Thus, with a top of the line Warp 13 mass accelerator, you can fling packets at speeds up to Warp 16.

Why would you want to fling packets slower than the rated speed? Simple: the planet you are sending packets to doesn't have a driver capable of catching the faster packets and you don't want to kill off your own colonists.

## Packet Decay Rate

---

Packets thrown over the rated speed of the mass driver decay as follows:

- +1 Warp 10% / year
- +2 Warp 25% / year
- +3 Warp 50% / year

There is a minimum decay of 10kT of each mineral in the packet each year.

Packets decay in both the year they are launched and the year they reach their destination by a prorated amount based on the distance they traveled that year. The decay rate is not of the original amount in the packet, but the current amount.

If you have the [Interstellar Traveler trait](#), packets flung at or below the drivers rated speed decay at 10% per year. Overflung packets decay as if flung at one Warp speed higher.

If you have the [Packet Physics trait](#), the decay rate is half the state stated rate; as is the minimum decay.

## Speed and Distance

---

Warp N means that something traveling at that speed will cover  $N \times N$  l.y. per year. Thus, a Warp 16 packet will travel 256 light years each turn!

## Damage and Recovery Formulas and Calculation

---

When a packet hits a planet without a mass driver, or with a mass driver rated beneath the speed of the incoming packet, damage will be done. Note that if a Warp 5 driver flings a packet at Warp 8 to another Warp 5 driver, damage WILL be done to the receiver. Damage is determined by the speed of the packet, not the rating of the driver sending the packet.

### Speed

$$\text{spdPacket} = \text{Packet Warp}^2$$

$$\text{spdReceiver} = \text{Rcvr Accel}^2$$

**Percent Caught Safely:** The percentage of the packet recovered intact.

$$\% \text{Caught Safely} = \text{spdReceiver} / \text{spdPacket}$$

**Minerals Recovered:** The receiver recovers 1/3 of the portion not caught safely.  
(packetkT x %CaughtSafely + packetkT x %remaining x 1/3)

### Raw Damage

$$\text{dmgRaw} = (\text{spdPacket} - \text{spdReceiver}) \times \text{wtPacket} / 160$$

### **Raw Damage modified by planetary defenses**

$\text{dmgRaw2} = \text{dmgRaw} \times (100\% - \text{pctDefCoverage})$

**Colonists Killed:** The number colonists killed is the larger (maximum) of the following:

$\text{dmgRaw2} \times \text{Population} / 1000$

$\text{dmgRaw2} \times 100$

### **Planetary Defenses Destroyed**

$\#\text{destroyed} = \#\text{defenses} \times \text{dmgRaw2} / 1000$

If  $\#\text{destroyed}$  is less than  $\text{dmgRaw2} / 20$ , then it is that number.

### **Example**

You fling a 1000kT packet at Warp 10 at a planet with a Warp 5 driver, a population of 250,000 and 50 defenses preventing 60% of incoming damage.

$\text{spdPacket} = 100$

$\text{spdReceiver} = 25$

$\%\text{CaughtSafely} = 25\%$

$\text{minerals recovered} = 1000\text{kT} \times 25\% + 1000\text{kT} \times 75\% \times 1/3 = 250 + 250 = 500\text{kT}$

$\text{dmgRaw} = 75 \times 1000 / 160 = 469$

$\text{dmgRaw2} = 469 \times 40\% = 188$

$\#\text{colonists killed} = \text{Max. of } (188 \times 250,000 / 1000, 188 \times 100) = \text{Max. of } (47,000, 18800) = 47,000 \text{ colonists}$

$\#\text{defenses destroyed} = 50 * 188 / 1000 = 9 \text{ (rounded down)}$

**If, however, the receiving planet had no mass driver or defenses, the damage is far greater:**

$\text{minerals recovered} = 1000\text{kT} \times 0\% + 1000\text{kT} \times 100\% \times 1/3 = \text{only } 333\text{kT.}$

$\text{dmgRaw} = 100 \times 1000 / 160 = 625$

$\text{dmgRaw2} = 625 \times 100\% = 625$

$\#\text{colonists killed} = \text{Max. of } (625 \times 250,000 / 1000, 625 \times 100) = \text{Max. of } (156,250, 62500) = 156,250.$

**If the packet sped up to Warp 13, then:**

$\text{dmgRaw2} = \text{dmgRaw} = 169 \times 1000 / 160 = 1056$

$\#\text{colonists killed} = \text{Max. of } (1056 \times 250,000 / 1000, 1056 \times 100) = \text{Max. of } (264,000, 105600) \text{ which entirely wipes out the colony.}$

---

**Learn more about:**

[Mass Driver Basics](#)

# Alternate Reality Races

## [More Guts](#)

Although Alternate Reality is really a primary trait, it is responsible for races so unusual it deserves its own topic.

## **Population and Growth**

---

The Alternate Reality race is a highly developed energy-based life form. Their "bodies" are fragile, flattening like paper under any but the lightest gravitational conditions. As a result they have adapted to living in starbases instead, controlling their planets from orbit. Their growth rate is still determined by the planet's value as these numbers indicate their tolerance to such factors as solar radiation and planetary gravity wells. Their maximum population per planet is determined by the starbase size. This ranges from 250,000 for starter colonies to 3,000,000 for their Death Star. Living on the starbase has a downside: if the starbase is destroyed, the population goes with it.

## **Scanners**

---

Alternate Reality colonists perform scanning duty from the starbase. The distance they scan is determined by the following formula:

Scanning Distance =  $\text{SQRT}(\text{Population} / 10)$

The Ultra Station and Death Star come with equipment that allows the colonists to also perform penetrating scans at half that distance as long as you don't select the [No Advanced Scanners trait](#) when defining the race.

## **Factories**

---

Since Alternative lifestyles aren't suited to planetary operations, they can't build factories either. However, due to their energy-based nature, the number of resources available at each planet is determined as follows:

Resources =  $\text{Habitability\_Value} \times \text{SQRT}(\text{Population} \times \text{Energy\_Tech\_Level} / \text{Efficiency\_Coefficient})$ .

The Efficiency Coefficient. is specified in the [Custom Race wizard](#). As the Energy tech level increases, so the efficiency.

## **Mining**

---

These folks can't build mines. Using energy powers alone, they can do a limited amount of mining equal to this formula:

Mining =  $\text{SQRT}(\text{Population}/10)$

However, since they don't actually inhabit the planet, there is nothing to stop them from remote mining worlds they own as well as uncolonized worlds.

## **Defenses**

---

Likewise, they can't build defenses. Since they live and die with their starbase, defenses don't have any meaning to them. People can't bomb Alternate Reality planets, and mineral packets flung from other planets don't kill Alternate Reality colonists.

The best defenses are advanced armor and weapons for the starbases, and minefields.

## **Starbases**

---



Starbases costs Alternators 20% less than other races (though this is not cumulative with the [Improved Starbases trait](#)). They are also able to build the Death Star, the biggest, baddest thing in the sky.

## **Colonization**

---

Alternators can't build normal colonization modules. They must build the more expensive Orbital Colonization modules capable of deploying as an Orbital Fort at the target world. This module can be mounted only on the colonizer hull. The hull is also capable of limited bombing to get rid of any pesky enemy startup colonies. An Orbital Colonization module can kill 2000 enemy colonists each year that it bombs.

There is a cost for traveling to other worlds. Interstellar travel kills 3% of any colonists in the fleet per year.

Alternators cannot drop colonists on worlds in order to take them over (no ground combat).

## Files Used in Stars!

[More Guts](#)

### **Host file -- gamename.hst**

---

This is the file containing the information the host program needs for a specific game. This file should be available only to the person playing the host.

### **Universe file -- gamename.xy**

---

This is the universe file, containing information about the positions of all the planets. It does not change over the course of the game. Individual players as well as the host program need to have this file available to them.

### **Turn file -- gamename.mN**

---

These are the turn files. N is a number from 1 to 16, representing the player number. This is the individual file for each player, containing all the data about that player's race and state of the player's empire at the beginning of a turn.

### **Race Description file -- name.rN files**

---

This file contains a race description created and saved using the Custom Race Wizard. N can be any number (you can actually use any extension, the default is r1.) You can specify a race file for each non-computer player in the game from step 2 of the New Advanced Game dialog. Once the universe has been created the race file is no longer needed. If you open this file from **File (Open)**, the Custom Race Wizard opens.

The extension of .r1 is the default, and is not required.

### **Log file -- gamename.xN**

---

These are the log files. N is a number from 1 to 16, representing the player number. This is the log of orders given by a player for the current turn. This file is submitted, either automatically or manually, to the host program. The host adds the changes to the player's .mN file, and returns that file to the player when the new turn is generated. The host needs these files to update the information about each player from the .hst file before turn generation.

Each time the player opens (or continues) a game, the .mN file is loaded. If a corresponding log file exists, it will also be loaded to update the game's current state.

### **History file -- gamename.hN**

---

These are history files. N is a number from 1 to 16, representing the player number. This file is created by the player as he sees universe data. It is a history of the things the player has seen or learned on previous turns. Typically, only the player maintains a copy of this file. If a player will be absent for a few turns, and wishes to be temporarily replaced by the "Housekeeper" AI, a copy of this file should be given to the host so the absent player's view of the universe can be updated.

If this file is lost, corrupted or moved to another directory, the player will not see what's been done in past turns.

### **Ini file -- stars.ini (in the Windows directory)**

---

Stars! Stores player options and current game information in this file. Most of the items in the file have to do with relatively unimportant stuff like the arrangement and windows, the

current scanner view and overlays.

### **User-definable Options**

The following items in the [Misc] section of stars.ini are user changeable:

#### **DefaultPassword=Foo**

Where Foo is whatever password you generally use. If you are sure that your opponents will not have access to your stars.ini file you can set this to your password. Whenever you open a game file that is protected by this password you will not be prompted to enter it.

#### **Backup=N**

Where N is a number between 1 and 999. Backup directories will be named Backup1 to BackupN and old game files will be stored there according to the turn number. For example with backup=4 then the first turn would be backed up to the directory backup1, the second to backup2, the third to backup3, the fourth to backup4, the fifth to backup1 and so on.

By default Stars! saves one previous turn's data in a directory it creates called Backup, without a number on the end.

#### **When the ini file is Written**

The stars.ini file is written the first time you play Stars and save a game. If you start Stars! and exit from the splash screen without saving a game, the file isn't written. You can delete this file, if you find a need.

# Keyboard Shortcuts

<b>Press</b>	<b>To</b>
<b>F1</b>	Open this <b>Players Guide</b> .
<b>F2</b>	Open the <b>Technology Browser</b> .
<b>F3</b>	First press opens the <b>Planet Summary Report</b> . Second press opens your <b>Fleet Summary Report</b> . Third press opens the <b>Others Fleet Summary Report</b> . Fourth press opens the <b>Battle Report</b> . Fifth press closes the report window.
<b>F4</b>	Open the <b>Ship Design</b> dialog.
<b>F5</b>	Open the <b>Research</b> dialog.
<b>F6</b>	Open the <b>Battle Plans</b> dialog.
<b>F7</b>	Open the <b>Player Relations</b> dialog.
<b>F8</b>	Open the <b>View Race</b> dialog.
<b>F9</b>	Generate a <b>new turn</b> , immediately.
<b>F10</b>	Display your <b>score</b> .
<b>1-6</b>	Change the Scanner view: Normal (1), Surface Mineral (2), Mineral Concentration (3), Planet Value (4), Population (5), No Player Info (6).
<b>7, 8, 9, 0, SHIFT-0</b>	Toggles these Scanner overlays: Radar Coverage (7), Mine Fields (8), Fleet Paths (9), Planet Names (0), Ship Count (SHIFT-0)
<b>Esc</b>	Closes the displayed <b>report</b> .
<b>CTRL F</b>	<b>Find</b> a planet or fleet in the Scanner.
<b>+ / -</b>	The plus (+) key zooms in the Scanner. The minus (-) key zooms back out.
<b>Up arrow</b>	<b>Up arrow</b> displays the previous message in the Messages pane. <b>Down arrow</b> displays the next message.
<b>Down arrow</b>	
<b>Home / End</b>	Display the first and last messages in the Messages pane.
<b>Enter</b>	Go from the Messages pane to the <b>related dialog or location</b>
<b>Backspace / Delete</b>	Deletes the selected waypoint.
<b>p / n</b>	Displays the previous or next planet or fleet in the Command pane.
<b>P / N</b>	Displays the previous or next planet with a starbase in the Command pane.
<b>q</b>	Opens the Production dialog.
<b>v</b>	Find your location in the Scanner pane.
<b>f</b>	Displays your fleet or planet with the lowest ID number in the Command pane. If the fleet is already selected the planet is displayed, and vice versa.
<b>,</b>	Decreases the selected fleets warp speed to the current waypoint by one.
<b>.</b>	Increases the selected fleets warp speed to the current waypoint by one.

## **Added Cost of Research**

The added cost of research represents the cost of such things as dilution of research efforts across more than one field, ramp up time to switch to entering a new fields of study, etc.

## **AI**

An AI is a computer player. AIs always exist in single player games and can exist in multi-player games, if chosen.

## **Als and Advantage Points**

The easy Als receive substantially fewer advantage points than you do. The expert Als receive quite a few more advantage points than you. The Standard and Hard Als fall somewhere in between.

## **Annual Growth Rate**

This rate is calculated by multiplying the habitability value by the "Maximum colonist growth rate per year" found on page 4 of the View Race dialog. For races with the Primary Racial Trait of Hyper-Expansion the actual maximum colonists growth rate is twice that displayed.



## **Battle Speed**

In computing movement in battle, the best speed for all engines is the figure for 120% fuel usage.

## **Best Warp Speed**

This is the maximum warp speed that the engines on this ship design can go at 120% normal fuel consumption or less. For Ramscoop engines it is the maximum speed the engine can travel without using fuel. This number appears in the Fleet Composition tile for the selected fleet.

This speed applies only to travel between waypoints, not battle.

**Capital Ship**

A ship with a power rating of greater than or equal to 2000.

## **Collateral Damage**

Damage taken by all non-targeted ships in the area of a torpedo blast.

## **Defenses and Invading Troops**

Defense percentage values are based on the installation's effectiveness against bombs. Planetary defenses are 75% effective against invading troops.

## **Dialogs and Displays**

A dialog is a graphical command window that you interact with by selecting options and specifying preferences. A display is a window that shows you current game settings, provides reference information or plays back an event.

## **Disengaging**

The token attempts to get out of battle (jump into hyperspace). It does not try to leave the square. Eventually, it will simply disappear from the board. Hopefully this means it has escaped and not been liberated to its component quarks.

## **Energy Sources for Starships**

Standard starship engines burn Fuel mined from planets while Ramscoops simply "scoop" fuel from the surrounding universe



## **Factory**

Factories produce resources. Resources are units of work created by people and factories for use in production, research and other tasks.

## **Fibonacci Series**

Fibonacci numbers are the unending sequence 1, 1, 2, 3, 5, 8, 13, 21, 34 ... where each term is defined as the sum of its two predecessors.

## **Fleet Colors**

A blue fleet belongs to you. A red fleet belongs to an opponent. A purple fleet indicates that both your fleet and an opponent's fleet are in the same, or nearly the same, location.

## **Fuel Poor Planets**

Poor is defined to be very low quantity (under 500 kT) or very low density (under 10).

## Host file

*gamename.hst* -- This is the file containing the information the host program needs for a specific game. This file should be available only to the person playing the host. If the file is password-protected, you will be asked for a password.

## **Initiative and Speed**

Initiative is order of movement in battle (ranging from 0 to 18), speed is the amount of movement (ranging from 1 to 8). All ships move in reverse order, the slower ships moving first, the faster ships last. This allows the faster ships to catch the slower ships (the faster ships fire first, the slower ships last, since the faster ships have the initiative.)

## **Load from Fleet**

Transport order. Load everything the other fleet has of an item, then leave.

## **Load Optimal**

Transport order. Load no more fuel than you need to reach the next waypoint. This option can only calculate the amount of fuel required for one waypoint. It will not attempt to load enough fuel to get you beyond your next waypoint. If each of your waypoints has a fuel reserve you can give Load Optimal Fuel orders at each waypoint to minimize the fuel useage for the whole journey.



## **Losing Colonists**

Colonists won't die or reproduce while terraforming a planet with a negative value. They're all sealed into space suits and too busy and scared to think or do anything else. If you do attempt to give them other tasks, such as building mines or factories, they will die off at the annual rate shown by the negative value in the Selection summary pane until you resume terraforming.

## **Maximum Ship Designs and Ships**

16 different ship designs at one time, and up to 32,000 ships of each design in a fleet.

## **Mine**

Mines bring minerals to the surface of your planets, where they are used in production.

## **Mineral Alchemy**

You will be able to turn resources into minerals. One instance of mineral alchemy will use 25 resources to produce one kT of each mineral. This item will be available in the production inventory and can be automated through the auto build feature of the production dialog.

## **Orbit Ring Colors**

A white circle indicates that one or more of your fleets are in orbit. A red circle indicates one or more of an opponent's fleets. A purple circles indicates that both your fleet(s) and an opponent's fleet(s) are in orbit.

## **Planet-penetrating Scanners**

These scanners can detect fleets in orbit around a planet. They also can tell you planetary stats from a distance.

## **Player Log file**

*gamename.mN* -- *N* is a number from 1 to 16, representing the player number. This is the individual file for each player, containing all the data about that player's race and state of the player's empire at the beginning of a turn. Both the player and the host maintain copies of this file.

You can load the current turn in a game by opening the **.m** file which has your player number in the extension. If the file is password-protected, you will be asked for a password.

## Race file

*name.rN* -- This file contains a race description created and saved using the Custom Race wizard. If you open this file from **File (Open)**, the Custom Race wizard. If the file is password-protected, you will be asked for a password. The .r extension is not required for a race file, so you may open race files saved using a different extension as well.



## **Rating**

A ship's rating is a relative value of its offensive capability. They are useful only for general comparison of similar ship designs to help you decide which design might be more effective in battle.

## **Race Description file -- name.rN files**

This file contains a race description created and saved using the Custom Race Wizard. *N* can be any number (you can actually use any extension, the default is r1.) If you open this file from **File (Open)**, the Custom Race Wizard opens, allowing you to view or change the race's attributes.

The extension of .r1 is the default, and is not required.

## **Resources**

Resources are units of work created by people and factories. They represent the cost of performing a task or producing an item

## **Round of Battle**

Battles last up to 16 rounds. One round of battle is each token getting a chance to move and fire. A round is broken into phases, where one phase is a single token moving and, if applicable, firing.

## **Ship Classes**

Unarmed ships -- any design that has no weapons and poses no threat

Utility ships -- unarmed ship that pose a threat (a subset of Unarmed ships)

Scouts -- ships based on the Scout, Super Scout, and Destroyer hulls.

Warships -- all other armed ships, including armed freighters.

Bomber -- any ship based on one of the Bomber hulls.

**Token**

Each token is a stack of identical ships from a single fleet.

## **Views in the Scanner pane**

Right-click on the blue diamond to display a list of different views of the universe. Left-click on a view in the list to alter the scanner's display.

## **Wait for Fleet**

Transport order. Wait for the other fleet to have enough of the mineral to fill your hold or until you've loaded the amount you specified in the Waypoint Tasks tile.



## **Hosting Multi-Player Games**

[Hosting Hot Seat Games](#)

[Hosting Network Games](#)

[Hosting Modem and Email Games](#)

[What Each Player Needs to Do](#)

[Being Absent from Play](#)

[Creating a Password](#)

[Creating a Universe from the Command Line](#)

## **How to Play with a Custom Race...**

[Create and Save a Custom Race](#)

[Add an Existing Race to a New Game](#)

[Edit an Existing Custom Race](#)

## **How to Manage Production...**

[Add an Item to the Production Queue](#)

[Remove an Item from the Production Queue](#)

[Clear the Production Queue](#)

[Create or Edit a Production Template](#)

[Unblock the Production Queue](#)

## **How to Assign Waypoints and Tasks...**

[Add Fleet Waypoints and Tasks](#)

[Move Fleet Waypoints](#)

[Delete Fleet Waypoints](#)

## **How to Manage Battles...**

[Make a New Battle Plan](#)

[Change the Contents of a Battle Plan](#)

[Lay Minefields](#)

[Sweep Minefields](#)

[Initiate Ground Combat](#)

[Replay a Battle in Space](#)

[View an Enemy Fleet Summary](#)

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## Frequently Asked Questions

### What's with this Demo Version?

This demo version has the following limitations:

- ◆ It's good for 21 days from the first day you start a game.
- ◆ Games can be played/hosted up to **80** turns, both in single and multi-player games. If you buy the retail version, you can use it to continue any unfinished game.
- ◆ You can't design races (you have to live with the built-in races). The retail version allows you to design, save and edit races.
- ◆ Technology is limited to level 10. The retail version has 26 levels. If you buy the retail version, you can use it to continue research past level 10.
- ◆ You are limited to tiny and small universes, and will not have access to certain other universe creation options. The retail version allows you to create medium, large and huge universes critical for large multi-player games, and gives you full access to all universe creation options.
- ◆ With the demo version, you get this help file. With the retail version you get: A fat, good looking manual; a pile of glossy tech reference cards; and a help file with built-in full text search (faster than Windows 95 help FTS).
- ◆ There's no sound or music in the demo version (a boon or baloney, depending on your style of play). The retail version has both sound and music, and allows you to insert your own music tracks in place of the music provided with the game.

With the exception of sound and music, the additional features you buy with the retail version make a tremendous amount of difference in play. The demo version makes for a pretty fair game. Adding race design, advanced research, larger universes, and other options will keep you exploring the possibilities for years to come. You don't have to believe us, though. See what players and reviewers have to say on the Stars! web sites (listed on [www.webmap.com/stars!](http://www.webmap.com/stars!)) and the newsgroup, [rec.games.computer.stars](mailto:rec.games.computer.stars).

When you're ready, read about [Buying Stars!](#).

### Is Anyone Out There?

#### Do the AIs (computer players) cheat?

Stars! is one of the few games where computer players **do not cheat**. The Stars! AIs are governed by the same code that governs human players, and receive the same information. Expert level AIs start with more race design advantage points than human players that is the only difference. If you feel like you've been taken advantage of by an AI, let us know. We'll investigate and, if we find that the AI does have an unfair advantage, we'll take it behind the woodshed for a good debugging.

#### Will anyone listen if I have feedback for the authors?

If you didn't like something in particular or experience problems with the game, or if you have good ideas for the game, please let us know. We answer all our mail and value your feedback -- if it's something we can help you with, we will. If it's just a matter of not having a feature you want, let us know that, too -- it just might show up in the next version.

When you submit your ideas, please keep in mind that Stars! is turn-based, not live action.

#### How do I get technical support?

If you haven't used the game tutorial, you should take a run through it. You can learn a lot about game play there even if you aren't just starting out. The online player's guide (help) and the manual contain

detailed documentation about virtually every aspect of the game.

If these resources don't yield answers to your questions, you can send e-mail to [support@webmap.com](mailto:support@webmap.com), or visit these web pages:

UK: <http://www.empire.co.uk>

US: <http://www.empire-us.com>

### **How do I submit bug reports?**

1. Write a description of the suspected bug in a text file.
2. Zip all the relevant game files and the text file:  
`pkzip gamename.zip gamename.* backup\gamename.* bugnotefile`
3. Send us the zip file in one of the following ways:
  - ⇒ Mail the zip file to [bugstars@webmap.com](mailto:bugstars@webmap.com) along with a description of the problem, or...
  - ⇒ FTP the zip file to [beast.webmap.com/pub](ftp://beast.webmap.com/pub).

Be sure to send e-mail to [bugstars@webmap.com](mailto:bugstars@webmap.com) with a description of the problem and the name of the zip file uploaded.

We appreciate the time and effort it takes to send these files. It helps us a great deal to have the actual game files when trying to determine if a bug exists. Thanks for taking the time to help Stars! maintain it's reputation as one of the most stable and bug-free games on the market.

### **When I zip my game files, they don't get any smaller. Why not?**

Stars! game files are already compressed.

## **Different Strokes**

### **Can several people play on the same computer using one copy?**

Yes. Up to 16 people can play "hot-seat" on the same computer with one copy of Stars!.

To play one game with several players on one machine:

#### **METHOD 1**

Each player can submit their turn, saves, and then returns to the splash screen using File (Close). You don't have to exit Stars! between players.

#### **METHOD 2**

If you have enough memory (about 2-4MB per player, depending on the universe size) you can run multiple instances of the game. An "instance" is one running session of the game.

For setup and play details, read about [Hosting Hot Seat Games](#).

### **Can two or more people, using the same machine, submit turns in the same e-mail game?**

Yes.

### **Where can I find hosted games and other players?**

WWW Host Sites:

Visit the Stars! website at <http://www.webmap.com/stars!>. You'll find a waypoints page which lists a number of Stars! sites where you can join games and find player resources.

Usenet Newsgroup:

rec.games.computer.stars

## **A Host's Work is Never Done**

### **Is it possible to Host Stars! from DOS?**

It depends. If the machine cannot run Windows, then the answer is No. If the machine can run Windows but usually does not, then the answer is Yes. It is possible to launch Windows and Stars! from a DOS batch file in such a way that Stars! will generate turns for one or more games and then exit all the way out of Windows allowing the batch file to continue where you left off.

For more information, read about [command line options](#).

### **Why is there any way for a host to retrieve a lost password?**

Any utility which allowed hosts to remove or change passwords would remove all security from the game. All an unscrupulous host would have to do is copy the game files to another directory and remove the passwords from the player's files in that directory. They could then look at everybody's data in that copy of the universe and no matter what Stars! did, the real players would never know. In a network game ANY player could pull the same trick. Security is an all or nothing element. If we didn't provide at least the minimal level of security we do now, multi-player Stars! games would be a joke.

## **While I'm Playing**

### **Can I design my own ship hulls?**

You can [design elaborate ship configurations](#), but you can't design your own hulls. This is a primary game-balancing restriction.

### **Can I use diplomacy?**

Stars! has features that allow you to practice [diplomacy in multi-player games](#). Use the Message pane to communicate with other players, arranging such things as alliances, rendezvous, trade agreements and non-aggression pacts.

When you're setting up the game, you can specify winning conditions that encourage diplomacy by allowing for multiple winners. Stars! does not require one winner.

You can declare neutral and friendly players using the Player Relations dialog. This prevents you from attacking the wrong people and allows you to automatically come to a friend's aid if they're under fire. Friends can also pass through each other's mine fields without harm. So it's worth while to set up alliances, even if they're temporary.

### **How can I print out a star chart of the universe?**

Use the **File (Print Map)** menu item.

## Buying Stars!

Sure, the demo version is great--more developed than most demo versions you'll find--but it's not enough. You can buy the full-blown, retail version off the store shelves, or by mail, phone or fax.

### What's in the Retail Version?

In addition to the large number of features already in the demo version, you'll find that the number of turns per game is unlimited, that you can research technology all the way up to level 26, that you can create larger universes, have access to more advanced universe creation options, and can design, save and edit custom races. You can also play sound and music (even inserting your own tracks, if you wish).

For more information about what you'll find in the retail version, read [Frequently Asked Questions](#).

### How to Buy

Stars! will be available on CD ROM at your local software dealer in November of 1996 (in non-English-speaking countries, it may appear slightly later). You can also order Stars! directly from Empire Interactive:

#### United States

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##### Mail Order

Address your order to:

Empire Interactive Mail Order Dept  
13220 Wisteria Dr  
Germantown, MD 20874

##### Credit Card Hotline

301 916 9302

##### Fax

301 916 0437

#### Europe

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##### Mail Order

Address your order to:

Mail Order Dept  
Empire Interactive  
"The Spires"  
677 High Rd  
London  
N12 0DA  
UK

Make sure to include your name and address, payment or credit card number, and number of copies you wish to purchase.

##### Credit Card Hotline

+44 181 343 9143

##### FAX

+44 181 343 7447

Empire Interactive can also be contacted through their Web site at [www.empire.co.uk](http://www.empire.co.uk).

## **Giving the Demo Version to Your Friends**

You can evaluate the demo version of Stars! for 21 days. If you plan to continue using it after 21 days, you must purchase the retail version. Please feel free to distribute the demo version to anyone you wish. Just make sure you give them everything that was included in the original .zip file.



