Stars! - Help Contents

REGISTER!

Getting Started

Playing	Commands	Screen
How to...	Guts	Keyboard

Warp 7

F9

What's New!

Getting Started and Other General Playing Info

One to 16 people can play Stars! using one computer or a local area network. You can also easily transfer turn files using a modem, FTP or email for BBS or other types of play where the host is at a remote site. These topics will introduce you to the game, and help you set up and manage each of these styles of   play, as well as handle any non-playing tasks.

What is Stars?

What You Need to Play

Tuning Stars for Your Screen Resolution

Setting Up Play

Submitting Your Turn

Being Absent from Play

Winning

Options for Launching Stars!

Exiting Stars!

Music and other Sounds

Full Text Search

Printing the Player's Guide

Customer Support

Submitting Bug Reports

Copy Protection

UNinstalling Stars!

The Stars! Screen

Details about what you see. Drill down in each part of the Stars! screen to get detailed help.

[Screen Layout](#)

[Commanding a Planet](#)

[Commanding a Fleet](#)

[Messages Pane](#)

[Scanner Pane](#)

[Selection Summary Pane](#)

Commands

The reference for all Stars! commands and dialogs.

The Stars! Menu   Player Relations

Quick Setup   Rename Fleet

Advanced Setup   Find Planet/Fleet

Race Creation   Defaults

Production   Custom Zip Orders

Technology Browser   Reports

Ship Design   Score

Research   Host Mode

Cargo Transfer   Change Password

Ship Transfer   File Open

Battle Plans   Save File

Battle VCR   Tutorial

How To...

Perform Miscellaneous Tasks

Using Full Text Search

Printing the Player's Guide

Get Help Fast

Send Messages to Other Players

Select a Planet or Fleet to Command

Obtain a Planet or Fleet Summary

Set Default Orders

Launch Stars! from a Command Line

Start a Game

Start a Single Player Game

Start a Multi-Player Game

Manage Production

Add an Item to the Production Queue

Remove an Item from the Production Queue

Clear the Production Queue

Unblock the Production Queue

Assign Waypoints

Add Fleet Waypoints and Tasks

Playing Stars!

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

[Getting Help Fast](#)

[Planets](#)

[Production](#)

[Research](#)

[Designing Ships](#)

[Building and Managing Fleets](#)

[Navigation](#)

[Colonization](#)

[Mining](#)

[Transporting Freight](#)

[Combat](#)

[Patroling](#)

[Scanning the Universe](#)

[Diplomacy](#)

[Cheating](#)

The Guts

Here's extra information we included just for Stars! nerds.

[Data Tables](#)

[The Guts of Combat](#)

[Races Provided with Stars!](#)

[The Guts of Mass Drivers](#)

[Files Used in Stars!](#)

Races Provided with Stars!

Here's a description each of the races provided with Stars, along with some basic strategies that take advantage of each race's strengths and weaknesses. You can also learn more about a race by opening the Custom Race wizard, selecting the race and stepping through the wizard.

Antethereals

Humanoids

Insectoids

Nucleotids

Rabbitoids

Silicanoids

Antethereals

Literally, "Big foreheads, long dirty claws, baggy pants." Antethereals are a fast growing, generally peaceable race, good at research and mining.

Best Universe Size/Game Difficulty

Against AIs, Antethereals do their best in a small universe, in an easy or medium game. It suffers in a large universe, at any level of difficulty, and in a medium+ universe in a hard+ game.

Advantages

Reproduces fairly fast. Research is cheaper than for most races. Efficient in production and remote mining operations.   Able to lay vast mine fields from the very start.

Disadvantages

Tiny survival range--you won't find many planets you can colonize. Can't use advanced war-related technology.   Unable to use penetrating scanners and engine technology is sometimes unreliable.

Strategies

Research for defensive hull types, long range weapons, propulsion (fast engines), construction (large cargo capacity).

Auto-build factories, then mines, then factories, until you find a better production strategy.

Explore as fast as possible.

Lay lots of overlapping small mine fields.   Remote detonate them when unsuspecting enemies get within their confines.

Build remote miners and freighters. Put ramscoops on the freighters to optimize fuel use and maximize speed.

Concentrate of remote mining. You can't be an Antethereal and follow a "green" strategy. Strip mine planets you can't colonize, using freighters to transport the minerals to your populated worlds. Be sure to assign the mining fleet itself as a waypoint, so freighters will follow the fleet

Put attack scout in orbit with remote miners, preventing easy colonization from opponents and an attack on your miner. Don't place the scout in the same fleet as the miner, though. Attach armed escorts to your freighters to protect them from attack as well.

On habitable planets, use remote miners for a few turns before colonizing, dumping all the mined minerals on the planet surface so the colonists have a large supply immediately available.

Win by out-researching your opponents. Since you'll concentrate on remote mining, invest in construction to build the biggest, most efficient remote miners possible.

Build very advanced, long range weapons. Avoid direct confrontations, building only as many warships as you need for defense.

Humanoids

Literally, "Over promoted." The absolute average race, with no special abilities or disabilities. Can swing either way, playing a defensive game that focuses on outgrowing and outproducing opponents, or an offensive game that focuses on crushing opponents through military might.

Best Universe/Game Size

Has the potential to do well in any size of universe.

Advantages

High growth rate, a pretty good habitable range. Lots of ships to start the game with. No serious disadvantages.

Disadvantages

They have no serious advantages, either. And they're dull.

Strategies

Try to determine the attributes of your opponents and adjust to counter them. You can adapt to compete against almost any kind of opponent.

Insectoids

Literally, "Eaters of Spackle."

Best Universe/Game Size

Large or better universe. You'll need time to increase your population size and develop powerful weapons.

Advantages

Immune to temperature. Good fighters, with top of the line warships and superior battle initiative. Cheap research for energy and weapons. Better than average with factories. Able to build cheaper starbases. Shields regenerate during battle.

Disadvantages

Need to find planets with gravity and radiation on the further ends of the spectrum. Limited to a few types of armor and even those are at ½ strength. Engine technology is sometimes unreliable. Has no chance to build freighter transport routes cheaply. Terraforming research is expensive.

Strategies

Your best chance is probably to out-produce and aggressively attack your opponents. Build fast warships and colonizers. You colonize slowly so build remote miners and search for nearby planets with plentiful mineral contents. Be aggressive with your neighbors, and their neighbors: what you can't colonize, take away.

Nucleotids

Literally, "Yo! Recombinate this!."

Best Universe/Game Size

Medium to large universe. This will give them time to grow and develop technology before encountering other races.

Advantages

Can live on almost any planet. Excellent at robotic mining. . Good at fighting and building starbases. Able to sneak up on opponents and steal valuable minerals.

Disadvantages

Very low growth rate. Below average in building and using factories and mines. Abysmal at performing research.

Strategies

Expand as fast as your population growth will let you. Avoid conflict for as long as possible. Concentrate on expansion.

Rabbitoids

Literally, "Swingers of the stars." A fast growing, generally peaceful race (not unlike the Antethereals).

Best Universe Size/Game Difficulty

Has the potential to do well in any size of universe.

Advantages

None of the other pre-made races grow faster (only the humanoids come close). Wide habitability range, as well as the ability to eventually terraform each environmental variable up to 30% makes proliferation highly likely. Although you are average at how many resources you create per person, your high growth rate will help increase the rate at which you create resources.

They are efficient with factories and terraforming planets. They start with Tech 5 in propulsion and construction giving them high speed engines and advanced hulls at the start of the game. In larger games their superior stargate technology gives them a definite edge in fleet deployment.

Disadvantages

Slightly below average miners. Unable to build penetrating scanners.

Strategies

Breed, breed, breed. With your habitable range, and terraforming advantages, you can inhabit a large portion of the universe.

Silicanoids

Literally, "Sand in crack." Descended from the long extinct race of Siliconoids. Abrasive by nature, immune to all environmental factors, can populate any planet, slow growing, slow to research. Planets are a common commodity for this race. If you lose a few, it won't matter, because you can live anywhere.

Best Universe Size/Game Difficulty

Does better in a medium universe, even better in a large to huge universe, at any level of game.

Advantages

Immune to all environmental attributes, which means you can colonize any planet. Produces resources quickly. Has access to additional ram scoop engines.   All engines use less fuel. The ultra flexible and powerful meta morph hull is available only to your race.

Disadvantages

Low growth rate, which means you can't colonize at too fast of a rate. Poor research hampers a quick and explosive start.

Strategies

Don't waste your time on scouts. Build mini-colony ships, fill them up, and colonize all the planets you find (make sure to colonize the more mineral-rich planets first). Don't pull people off planets faster than you can grow them, though. Otherwise you'll have thinly populated worlds ripe for takeover.

If the universe is large, you'll have many planets colonized by the time you encounter your opponents.

No need for remote mining, since you can colonize anything.

Auto-build factories, then mines, then factories, until you find a better production strategy.

Build starbases whenever you have enough resources.

Build big bombers to clear your opponent's planets.

Build defensive fleets and park them near your starbases, holding off bombing raids by AIs.

The Guts of Combat

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](#)

[Tactics](#)

[Damage](#)

[Armor and Shields](#)

[Hull Repair](#)

[Intiative and Movement in Battle](#)

[Weapons Properties](#)

About the Battle Board

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.

Each round of battle is broken into phases, where one phase is a single token moving and, if applicable, firing. Within a round, the order in which the tokens move is determined by their speed: the slowest tokens move first, the fastest move last, assuring that the fastest tokens will catch the slow boats. The fastest ships fires first, the slowest ship fires last.

If more than 255 tokens are involved in a battle, you will not receive a VCR recording of the battle.

Tactics

A fleet's battle plan lists a tactic for each general class of ship--unarmed, scout, warship and bomber. Tactics fall into four styles: attack, decoy, self-destruct and retreat.

Attack

Attack tactics determine the distance the token attempts to stay away from its target. The attack tactics are Get in Close and Fight it Out, Keep to the Optimal Range, Keep to the Maximum Range, Lightning Strike and Defensive Advance.

Close range is point blank: the ship is within the same square on the battle board as its opponent. Maximum is as you'd expect: the minimum of the maximum ranges of the weapons on a ship. Optimum is the maximum range at which the ship can do 100% damage. For ships with beam weapons that distance is one square on the battle board. Ships with torpedoes only stay at maximum range.

Lightning Strike behaves like Keep to Optimal Range except that you gain a +4 initiative bonus at the expense of your armor and shields. Armor and shields are only 25% effective. Every two initiative points is equal to one square of movement in battle.

Defensive Advance behaves like Keep to Optimal Range except that your armor and shields are 25% more effective at the expense of 4 initiative points.

Decoy

The decoy tactic is Act as Decoys for the Rest of the Fleet. This causes the token to move closer then away from enemy tokens in an attempt to draw their fire.

Retreat

The retreat tactics are Slowly Back Away, Attacks Permitted, and Run Away as Fast as Possible. Both of these tactics cause the token to disengage. Disengaging requires time to prepare the ships for escape. Ships with a token speed greater than 10 can retreat one round sooner than that listed below.

Run Away... causes the entire crew to concentrate all their efforts on escape. The number of rounds a token sits there trying to run away is either 2, or 6 minus the token speed, whichever is greater.

Slowly Back Away... causes the escaping ships to attack as they're disengaging. This increases the amount of time they remain on the board and under attack. The number of rounds a token sits there trying to back away is either 3, or 9 minus the token speed, whichever is greater.

Self-Destruct

Self-Destruct (close range) behaves like the Get in Close and Fight it Out attack tactic except that once the token reaches point blank range it blow up.

Self-Destruct (medium range) behaves like Get in Close except that it blows up at two squares away or less.

Self-Destruct (long range) behaves like Get in Close except that it blows up at 4 squares away or less.

How much damage will a self-destructing token (or stack of ships) do? For each ship in the token the amount of damage it will do when it self-destructs is the maximum of its empty hull weight and its "power" rating as displayed in the Ship Designer. This damage behaves as an area effect weapon with a radius of 4 centered on the square containing the self destructing token. For more details, read about area effect damage.

Damage, Armor and Shields

Read this section with the section on Weapon Properties for a fuller understanding of how armor, shields and specific weapon types interact in Stars!.

Damage

Damage is displayed as C @ P%, where C is the count of damaged ships of one type in a fleet (or a token, as it's described in shorthand) and P is the percentage of damage inflicted. For example, 10@33% says that 10 ships are 1/3rd damaged.

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 wrought in the following ways:

Area damage is first applied to shields. Any damage beyond that which the shields can absorb is applied to each ship in the token, in full. Which means the shields take the hit, and deteriorate by the number of damage points caused by the weapon. For example if a token has 50dp of shields and is hit with 100 points of area effect damage then 50dp will be eaten by the shields leaving no shields remaining and 50dp of damage is applied to the armor of each of the ships is the token.

Torpedo damage affects one ship directly, and ALL other ships within that square take collateral damage of 1/8 the strength of the torpedo (applied directly to the shields, collateral damage being area affect damage). Deflected torpedos do collateral damage to all tokens including their original target. Starbases are immune to collateral damage unless they are the target token.

Beam weapon damage is localized to the targeted token. Any damage points not needed to destroy the target token are applied against other tokens in the same square up to a number of targets equal to the count of ships in the attacking token.

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 lesser racial trait then your shields will regenerate 10% of their current 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 can be 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 1000dp of beam weapon damage. The primary target is destroyed after taking 500 damage. There are 10 other tokens at the same location, each with 100dp of shield/armor, so 4 of them would be destroyed.

Weaponies Properties

Read this section with the section on Damage, Armor and Shields for a fuller understanding of how armor, shields and specific weapon types interact in Stars!.

Beam Weapons

Beam weapons have a maximum range of four squares or less, and lose 10% power per square if it has to travel more than one square. In the same square or one square away, the rated damage is 100%, at two squares it's 90%, at three it's 80% and at four it's 70%.

> If you've played Stars! 1.x, you may notice that beam weapons tend to be more powerful in version 2 and are now spread over the entire 26 tech levels

See the Beam Weapons section of the Technology browser for more information.

Torpedoes

Torpedoes have maximum range and do not lose power over distance. Torpedoes attack the first ship in the token directly. Direct damage is done to the top ship in the token, and the ships are eaten one at a time. 1/4 of all direct damage bypasses shields and hits the armor directly, 3/4 hits the shields. If the ship is unshielded, 100% of the damage is applied to the armor.

1/8 damage is done to the shields of every other token in the same location, even your own (akin to secondary smoke). This makes torpedoes a type of area affect weapon.

Torpedoes can be deflected using jammers. Deflected torpedoes still explode in the targeted square, and ALL ships take collateral damage (1/8 the torpedo strength). This does not include starbases, unless the starbase was the target (in which case, the starbase takes collateral damage, too.)

> Torpedoes tend to be less powerful than they were in version 1.x and are spread over the entire 26 tech levels.

See the Torpedoes section of the Technology browser for more information.

Jammers

Jammers give incoming torpedoes a chance of missing.   The Jammer 10, 30 and 50 are available to Inner Strength players only. Jammer strength is additive. If a token has two 20% jammers, the first jammer lowers the probability of the torpedo hitting down to 80%, the second jammer takes the 80% and reduces it another 20%, reducing the probability of a hit down to 64%.

See the Special section of the Technology Browser for more information.

Stasis Sump

This device absorbs 50% of all area affect damage to the token. This applies to all damage done by rail guns, the Magno Pulse and Magno Needle weapons, and to collateral damage done by torpedoes.

Field Dissipater

Shields are reduced by 25% per dissipater on each SHIP in the square, including your own. Dissipaters are additive, no matter who owns them. If a token has two Dissipaters, the first reduces the shields   down to 75%, the second Dissipater takes the 75% and reduces it another 25%, reducing all shields down to 56%.

Energy Dampener

Slows down ALL ships in the entire battle board by 4 initiative points, 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.

Area Weapons

There are three types of area affect weapons: the Magno Pulse that fires like a torpedo,; the Magno Needle, a ray weapon; and the Rail Gun. Collateral damage created by a torpedo explosion is also considered area effect damage (we've described that just above).

Magno Pulse

This series of weapons has a targeting range and a radius of blast. These weapons damage every token in every square in the blast area.

Damage is reduced based on distance from center of blast. Tokens in the target square take full damage. Tokens one square away from the center of the blast take ½ damage. Tokens two squares away from the center of the blast take ¼ damage and so on to the limit of the blast's radius. Shields take all damage until they are gone, then any remaining damage hits the armor of EVERY ship in the token. The attacking token will take damage if it is within the blast radius.

Magno Needle (ray weapon)

These are area weapons that work like a beam rather than a torpedo. For these weapons the range is the length of the beam. It creates a fan shaped beam, hurting everything in its path. It goes through everything to the end of its range. All tokens on a line through the target square take damage.If the target ship is not in the same square as the attacker then no ships in the starting square are damaged. If the target is in the same square as the attacker then the target token takes full damage and all other tokens in the same square except the attacking token have a 25% chance of taking full damage. In this case the line of fire is random and all squares in the in line of fire take damage for the range of the weapon.

All tokens one square away take full damage. Damage diminishes over distance. Tokens two squares away take ½ damage, three squares away take ¼ damage and so on.

Rail Gun

The Rail Gun has a very long range which allows you to hit every square on the battle board. They fling neutronium pellets that do damage to anything they hit. Every token in the target square takes one point of damage.

See the Area Weapons section of the Technology browser for details.

Hull Repair

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:

Ship location:	Annual rate:
Moving through space.	1%
Stopped in space.	2%
Orbiting but not bombing an opponent's planet.	3%
Orbiting a planet you own, with a spacedock.	20%
Orbiting a planet you own, with a starbase but not a spacedock.	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

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 race trait, starbases are repaired at 15% a year.

Initiative and Movement in Battle

Initiative is *order* of movement in battle (ranging from 0 to 15). Movement ranges from 1 to 8 squares on the battle board. 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.)

Movement is computed using a token's battle speed and mass. Maneuvering Jets, Overthrusters and the War Monger race trait can increase a token's base speed. The number of squares a token can move per round equals one plus their speed divided by 2.

Speed is also used to decide the order of movement. For example, if your ships have a battle speed of 9 and the evil star-sucking Robotoid ships have a battle speed of 8 both sets of ships will move 4 spaces per round. Your ships will move and fire first, though (the slightly higher speed giving you the advantage).

The Formula for Movement

Movement = ((Battle_Speed + Num_Thrusters + Num_Overthrusters*2 + War_Monger_Initiative_of_1 - weight_penalty) +1)/2

The War Monger initiative applies only if you've chosen this primary trait.

The weight penalty is calculated as follows:

- If weight > 1000, the penalty is 6.
- If 1000 > weight > 500, the penalty is 5.
- Otherwise, the penalty is weight/100.

Overthrusters and Initiative

Multiple Overthrusters are additive. One Overthruster gives you a +2 initiative in battle which gives the token a speed bonus of 1 square of movement per round. Two Overthrusters gives the token a +4 initiative, and so on. There is a limit on the maximum initiative/speed a token (stack of ships) can have but excess speed can help make up for the penalties caused by hull and cargo mass.

Let's say for example that you have:

- A ship with a empty mass of 250kT
- 300kT of cargo
- Warp 7 engines
- Two overthrusters

Your initial initiative is your Warp speed minus 4: (7 - 4 = 3).

You get a bonus of +2 for each overthruster: (3 + 4 = 7).

You get a penalty of -1 for each 100kT of mass (not counting fuel):

   (250kT + 300kT / 100 = 5 and 7 - 5 = 2)

So your final initiative is 2. Your speed is (initiative / 2) + 1 or in this case 2. If this ship had no cargo it would have an initiative of 5 and a speed of 3.

Maneuvering Jets and Initiative

Each Maneuvering Jet gives the token an initiative of +1, or one-half extra square of movement per round of battle. Each additional Maneuvering Jet provides an additional one-half square of movement. For an example of how to calculate this advantage for your ship,

refer to the preceding example for Overthrusters, halving the initiative shown to determine the advantage provided by Maneuvering Jets.

The Guts of Mass Drivers

So you always wondered exactly what sort of damage a mass packet was capable of doing? Here's the scoop on mass packets.

Mass packets can be flung at any speed from Warp 5 to 3 Warp levels above its 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 throwing to doesn't have an driver capable of catching the faster packets and you don't want to kill off your own colonists.

Packets thrown over the rated speed of the mass driver decay as follows:

+1 Warp   10% / year (turn)

+2 Warp   25% / year (turn)

+3 Warp   50% / year (turn)

There is a minimum decay of 10kT of each mineral in the packet each year.

There is no decay the year the packet is launched or reaches its destination. The decay rate is not of the original amount in the packet, but the current amount.

If you have the Packet Physics advantage, the decay rate is half the stated rate; as is the minimum decay.

Warp X means that something traveling at that speed will cover X * X l.y. per year.   Thus, a Warp 16 packet will travel 256 light years each turn!

Damage 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. The speed of the packet, not the capabilities of the sender, controls the damage:

spdPacket = Packet Warp ^ 2

spdReceiver = Rcvr Accel ^ 2

%CaughtSafely = spdReceiver / spdPacket

The %CaughtSafely is the percentage of the packet recovered intact.   The receiver will also recover 1/3 of the remainder of the packet:

dmgRaw = (spdPacket - spdReceiver) * wtPacket / 160

This value is further modified by planetary defenses:

dmgRaw2 = dmgRaw * (100% - pctDefCoverage)

The number colonists killed is the maximum of

dmgRaw2 * Population / 1000   AND   dmgRaw2*100

Planetary defenses are destroyed as follows:

#destroyed = #defenses * dmgRaw2 / 1000

if #destroyed is less 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.

$$spdPacket = 100$$

$$spdReceiver = 25$$

$$\%CaughtSafely = 25\%$$

Thus the receiver will recover 1000kT * 25% + 1000kT * 75% * 1/3 = 250 + 250 = 500kT

$$dmgRaw = 75 * 1000 / 160 = 469$$

$$dmgRaw2 = 469 * 40\% = 188$$

#colonists killed = Max (188 * 250,000 / 1000, 188 * 100) = Max (47,000, 18800) = 47,000 colonists

#defenses destroyed = 50 * 188 / 1000 = 9

If, however, the receiving planet had no mass driver or defenses, the situation is quite a bit different:

The receiver will recover only 333kT of minerals.

$$dmgRaw = 100 * 1000 / 160 = 625$$

$$dmgRaw2 = 625 * 100\% = 625$$

#colonists killed = Max (625 * 250,000 / 1000, 625 * 100) = Max (156,250, 62500) = 156,250.

If the packet sped up to Warp 13, then:

$$dmgRaw2 = dmgRaw = 169 * 1000 / 160 = 1056$$

#colonists killed = Max(1056 * 250,000 / 1000, 1056 *100) = Max (264,000, 105600) which entirely wipes out the colony.

Learn more about:

Mass Driver Basics

Files Used in Stars!

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.

These files don't require the extension to be .r1 but that is the default.

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 commands 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 .m*N* 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 .m*N* 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 "Human Inactive" 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.

Menu Commands

Click on a menu name, then click on a command to learn more...

File View Turn Commands Report Help

New Game (Quick Setup)

[More Stars! Commands](#)

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](#)

[Medium Universe](#)　　　[Advanced Game](#)

[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.

Learn about:

[Races Provided with Stars!](#)

New Game (Advanced Setup)   REGISTER!

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.

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 Victory Conditions

Learn how to:

Start a Multi-player Game

Step 1: Specifying the Universe (Advanced Setup)   REGISTER!

[Other Advanced Setup Options](#)

[More Stars! Commands](#)

New Advanced Game wizard / View Game Parameters dialog

Create the universe, using the following options:

[Game Name](#)	[Player Positions](#)
[Tiny Universe](#)	[Beginner: Unlimited Minerals](#)
[Small Universe](#)	[Slower Tech Advances](#)
[Medium Universe](#)	[Computer Players Form Alliances](#)
[Large Universe](#)	[Accelerated BBS Play](#)
[Huge Universe](#)	
[Density](#)	[Public Player Scores](#)

When you complete this step, move on to specify the [number, types and races of the players](#).

Game Name

Game Name: Voyage of the Damned

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.^2. That is, if you divided the universe up into squares 70 l.y.^2. 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.^2. Selecting **Dense** increases the density to approximately one planet for every 4000 l.y.^2.

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: Unlimited Minerals

Every planet has 40,000 kT of each mineral. 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 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.

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.

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 need to worry about running out of colonists if you want to send out a bunch of colony ships at the beginning of 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. Games with this option usually have a winner emerging before turn 100. The 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.

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.

Step 2: Specifying the Players (Advanced Setup)   REGISTER!

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: Victory Conditions (Advanced Setup) `REGISTER!`

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 victory conditions, you can click on **Finish** and let the game begin.

    Both the SHIFT and CTRL keys act as accelerators on this step.

To learn more about hosting Stars! read:

Custom Race wizard

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.

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 (what, did you think there wouldn't be a catch to playing God?).

Use the buttons to move between steps while trying to compensate for your greedy ambitions.

> 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)

REGISTER!

More Custom Race Steps

More Stars! Commands

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 -- Mineable 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

Race Name:	Humanoid
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.

No Ssssss: *Don't* pluralize the race name.

Predefined Races

Selecting a predefined race automatically presets all of the options in steps 2 through 6. Choosing a predefined races 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.

You can use the Race Creation wizard to learn about each "canned" race:

1. Select each predefined race in turn.

2. Use the [< Back] [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.

5. [● Custom] The predefined race type changes to custom after you change any settings.

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 -- Mineable Minerals

You will get 40kT of mineable minerals for each leftover advantage point. These minerals are beneath the surface and must be mined. Stars! will weight 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.

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)   REGISTER!

[More Custom Race Steps](#)

[More Stars! Commands](#)

Custom Race wizard / View Race dialog

Choose the primary characteristics for your race. Each type gives you a specific and powerful set of strengths. Click on the following for a list of the specific technologies, advantages and disadvantages:

[Hyper-Expansion](#)   [Space Demolition](#)

[Super Stealth](#)   [Packet Physics](#)

[War Monger](#)   [Interstellar Traveller](#)

[Inner-Strength](#)   [Jack-of-All-Trades](#)

Learning more about technology
Use the Technology Browser (press F2) to learn more about any of the technology listed for each primary trait.

Once you determine your primary traits, refine your race by [choosing secondary traits in step 3](#).

Hyper-Expansion

Starting Advantages

◆ Growth rate is twice the value shown on step 4 of the Custom Race wizard.

◆ Maximum population limitation is half what the planet would normally support for a race with your environment requirements (also on step 4 of the wizard).

◆ One armed scout

◆ Three mini-colony ships

Exclusive Hulls

◆ Mini-Colonizer hull

◆ The completely flexible Meta Morph hull, available only to Hyper-expansion race.

Exclusive Engines

◆ Settler's Delight engine--Warp 6 for free, but only for Mini-Colonizer hull.

Exclusive Components

◆ Field Dissipater that weakens the shields of all ships in the same location (square) by 25%.

Super-Stealth

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 standard cargo 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 90 plus a 15% cloak.

◆ Depleted Neutronium with an armor strength of 280 plus a 10% cloak.

◆ Transport Cloak

◆ Ultra-Stealth Cloak

War Monger

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
- Dreadnaught hull

Exclusive Weapons

- Magno Pulse Mark I area weapon power 100 range 2 radius 1
- Magno Pulse Mark III area weapon power 400 range 4 radius 3
- Magno Needle SE ray weapon power 150 range 3
- Magno Needle LX ray weapon power 600 range 5

Exclusive Abilities

- +2 initiative in battle.
- Colonists attack better.
- Can build SDI defenses only, up to 50 per planet.

Inner-Strength

Starting Advantages

◆ One scout

◆ One colony ship

Exclusive Hulls

◆ Super Freighter hull

◆ Fuel Transport hull

Exclusive Components

◆ Croby Sharmor shield strength 80 plus 100 dp as armor

◆ Fielded Kelarium armor strength 275 plus 50 dp as shield

◆ Speed Trap 30 mines--stops fleets cold

◆ Jammer 10, 30, 50 deflects torpedoes (you still take collateral damage)

Exclusive Weapons

◆ Wide-Beam Mine Phaser power 35 range 4 sweeps mines at 500 /year

◆ No Smart, Neutron, Enriched Neutron, Peerless or Annihilator bombs

Exclusive Abilities

◆ Colonists defend better.

◆ Ships heal faster

◆ Planetary defenses cost 40% less

◆ Colonists on freighters reproduce at 1/2 of their max rate

Space Demolition

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 80, 150, 250 -- standard mines.
- Mass Discriminator 100, 230, 400   These mines detonate for ships > 200kT mass
- Speed Trap 30, 60, 90 mines -- stops fleets cold.

Exclusive Components

- Tachyon Detector, reduces the effectiveness of other players cloaks by 25%.

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 one warp faster than other players.
- Can remotely detonate minefields.
- Mine fields decay at a rate of 1% a year. All other player's fields decay at 2% a year.

Packet Physics

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
- Mass 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

- Mass packets are smaller and cheaper to build.

Interstellar Traveler

Starting Advantages

◆ 2 planets with 100/250 stargates (in non-tiny universes only)

◆ Tech 5 in prop and const.

◆ One scout

◆ One colony ship

◆ One destroyer

◆ One privateer

Exclusive Hulls

◆ Stargates any/300, 100/any, any/800, any/any

Exclusive Components

◆ Stasis Sump absorbs 25% of all area effect damage producing 1kT of fuel for each 10dp absorbed.

Exclusive Abilities

◆ Exceeding the safety limits of stargates is less likely to kill your ships.

◆ Stargates cost 25% less.

◆ Stargates reveal planetary stats on all other planets with stargates in range.

Jack of All Trades

Starting Advantages

- Tech 3 in all fields
- Two scouts
- One colony ship
- One medium freighter
- One mini bomber
- One mini miner
- One destroyer

Exclusive Components

- Scout, Frigate and Destroyer hulls get a built-in 40/20 scanner

Exclusive Abilities

- Improves all "Costs 25% extra" fields to tech level 4 if the box in step 6 is checked. (Prpoer use can cause both the bomber and medium freighter initial designs to be upgraded.)

Step 3: Secondary Traits (Player Race)

Custom Race wizard / View Race dialog

Specify/view the secondary 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:

Improved Fuel Efficiency	No Ramscoop Engines
Total Terraforming	Balky Engines
Advanced Remote Mining	Only Basic Remote Mining
Improved Starbases	No Advanced Scanners
Jump Start	Low Starting Population
Mineral Alchemy	Regenerating Shields

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 Trans-Galactic Mizer Scoop engines are also available.

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-Starbase is the biggest thing in the sky. Your starbase will cloak planets by 20%. Starbases will cost you 25% less to build.

Jump Start

You start the game with your scout ships orbiting the three planets nearest your home world. You also start with a small freighter. Unfortunately all players will know the vitals of your home world.

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.

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 or the Trans-Galactic Mizer Scoop. You will be able to build the Interspace-10 engine, the only engine that can travel warp 10 without taking damage.

Balky Engines

Your ships 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 hulls.

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 2500 people, you start with 2000 (20% fewer) Does not seem to be bad disadvantage, but is in fact really nasty when you consider the compound interest qualities involved. It takes a long time to overcome a lower starting population -- it helps to have a high growth rate, but even then it is painful.

Regenerating Shields

All shields are 40% stronger than the listed rating. Shields regenerate at 10% of the remaining strength after every round of battle. Only two basic armors will be available, and at 50% of their rated strength.

Step 4: Population Growth Factors (Player Race)   REGISTER!

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:
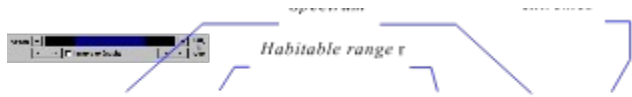
Growth Conditions

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.

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 as many of each mineral as a mild-mannered vacation world.

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.

Immunity

Selecting the Immune to 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. You will still want to terraform less than perfect planets.

Follow these links to learn about:

Maximum Population Growth

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 15% 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%** [▲▼]

The planet May is the homeworld for a race with a 10% maximum colonist growth rate. As with all homeworlds, May has a planetary value of 100%.
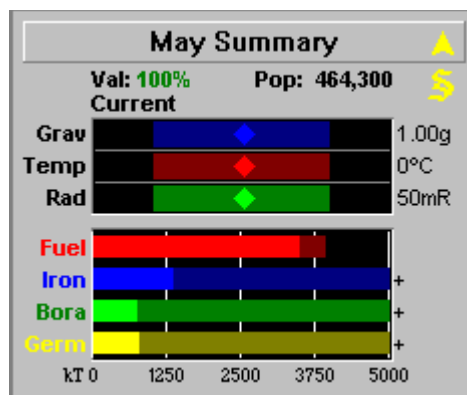
Clicking on the Value in the Selection Summary pane for the planet May displays this popup:

Your population on **May** is **464300**. **May** will support a population of up to **1000000** of your colonists. Your population on **May** will grow by up to 10% per year.

Your people on May decide to colonize Demski, a nearby rock with a planetary value of 15%.
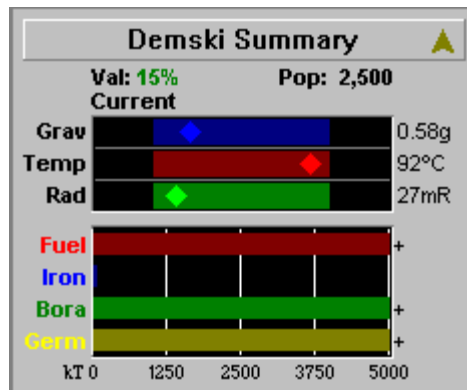
Clicking on the Value in the Selection Summary pane for the planet Demski displays this popup:

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.

Follow these links to learn about:

Step 5: Population Efficiency (Player Race)

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.

‹ Back   Next ›

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.

Next you'll specify the cost of research for your race.

Step 6: Research Costs (Player Race)

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.

< Back   Next >

Selecting **Costs 25% extra** to increase the available advantage points.

Selecting **Costs 25% less** to decrease the available advantage points.

○ Costs 25% extra
◉ Costs standard amount
○ Costs 25% less

If you check All 'Costs 25% extra' research fields start at Tech 3, then it is to your advantage to have as many research fields 'Costs 25% extra' as makes sense, as this option costs a flat fee.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! Commands

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.

Save As

File **N**ame: **D**irectories:

gump.r1   c:\stars

hillbily.r1   📂 c:\
villian.r1   📁 stars

1. Type a file name (in this case, *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

< Back   Next >

More Stars! Commands

How to Manage Production

Here you order a planet to build ships, defenses, factories, mines and starbases. You can also schedule terraforming, mineral alchemy and demolition of existing factories, mines and defenses. To learn about the kinds of items that you can build visit the Technology Browser (press F2).

The Production dialog has the following features:

Production Inventory

Production Queue

Previous and Next Queues

Auto Build

Contribute Only Leftover Resources to Research

Production Inventory

Other Production dialog features

More Stars! Commands

Liliputian Freighter
Smaugarian Peeping Tom
Small Colonizer
Destroyer
Factory
Raze Factory
Mine
Raze Mine
Defenses

Inventory list of everything the planet can build.

Required Minerals:

Ironium	2 kT
Boranium	2 kT
Germanium	2 kT
Resources	10

Amount of each mineral and number of resources required to produce one of whatever is selected in the inventory.

Production Queue

```
--- Top of the Queue ---
Factory                        10
Defenses                       30
Liliputian Freighter           20
Destroyer                      15


Required Minerals:
   Ironium                 20 kT
   Boranium                20 kT
   Germanium               20 kT
   Resources                100
0% Done,  Completion 1 year
```

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** -- at least one of these items cannot be built due to a lack of the required minerals.

```
0% Done,  Completion Never
```

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.

Previous and Next Queues

Click on **Previous** and **Next** to display the production queues for each of your other planets.

Auto Build   < Back   Next >

◆ Auto Build

Whenever the production queue is empty, the planet will add the selected item to the queue, then build as many as possible until another item is manually added to the queue.

To select an auto-build mode:

1. Right-click on the blue diamond to open the list.

2. Left click on the item you want to auto-build.

The following auto-build items are possible:

◆ **Mines, Factories, Defenses** -- Builds as many as your planet's population can operate. As the planet's population goes up, so does the production capacity.

◆ **Mines then Factories** -- Builds as many mines as the planet's population can operate then switches to factories until the population increases enough to build more mines.

◆ **Factories then Mines** -- Builds as many factories as the planet's population can operate then switches to mines until the population increases enough to build more factories.

◆ **Mineral Alchemy --** Mineral alchemy turns 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.

If you have the Mineral Alchemy lesser racial trait and are Auto Building anything that requires minerals then Mineral Alchemy will automatically be added to queue when production of Auto Build items is blocked due to a lack of minerals.

Note: Mineral Alchemy is displayed in your auto-build list only if you selected the Mineral Alchemy racial trait.

◆ **Mineral Packets --** Packages up as many of the planet's surface minerals and flings them to the planet's specified target.   Prefers to send mixed packets, but will send single mineral packets if a shortage of one mineral prevents a mixed packet from being formed.

Contributing Only Leftover Resources to Research

< Back   Next >

Other Production dialog features

More Stars! Commands

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 whatever percentage has been set in the Research dialog's budget control. If the production queue empties or is blocked during a turn, any 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.

Technology Browser

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

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

Technology Browser

[<- Prev]   [All ▼]   [Next ->]

Radiating Hydro-Ram Scoop

Ironium	18kT **Mass: 10kT**
Boranium	9kT
Germanium	7kT
Resources	7

Resource costs and weight.

Tech Req:
Ener: 2
Prop: 6
Available

Fuel Usage vs. Warp Speed

800%
400%
200%
100%
50%
25%

Warp 0   1   2   3   4   5   6   7   8   9

Technical stats and capabilities.

This engine creates powerful waves of radiation and will kill some of your colonists each year if your race can't tolerate a Radiation level of 90mR.

Warnings and special notes about availability and race.

☐ **Show Only Available Technology**   [**Close**]

Select to show only technologies you can currently build.

Ship Designer

How to Design Ships

More Stars! Commands

The Ship 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.

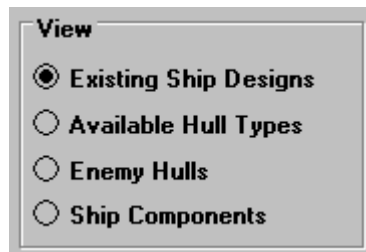**Here are the features you'll need to use:**

Dialog View

Hull Schematic

Hull Component List

Dialog View

< Back   Next >

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.

Hull Schematic

< Back   Next >

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.
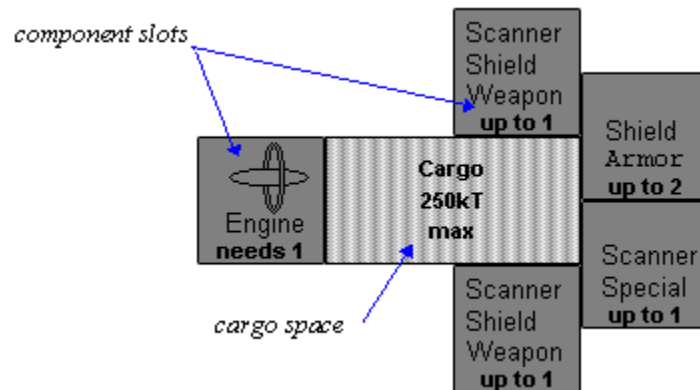
The cost, mass, fuel capacity, and shield and armor strengths of a ship are shown in the lower-right corner of the Ship Designer dialog. The values change as components are added or removed.

Cost of one Privateer

Ironium	58kT	Max Fuel:	175kT
Boranium	6kT	Shields:	450dp
Germaniun	23kT	Armor:	300dp
Resources	72		

Mass: 108kT

Hull Component List
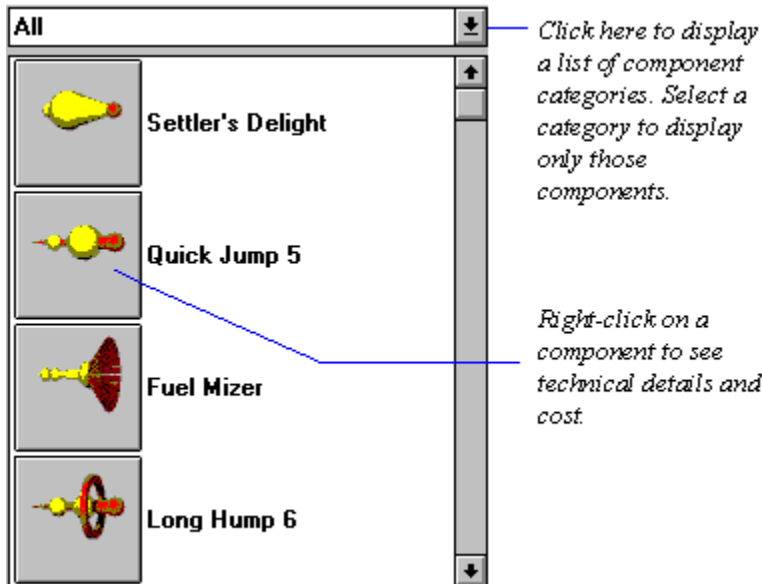
Other Ship Designer features

More Stars! Commands

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.

All
Settler's Delight
Quick Jump 5
Fuel Mizer
Long Hump 6

Click here to display a list of component categories. Select a category to display only those components.

Right-click on a component to see technical details and cost.

When a component is selected, the cost and mass of the item are shown in the lower-left corner of the Ship Designer dialog.

Cost of one Anti-Matter Pulverizer

Ironium	10kT
Boranium	80kT
Germanium	25kT
Resources	130

Mass: 21kT

Research dialog

More Stars! Commands

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

< Back   Next >

Other Research dialog features

More Stars! Commands

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! Commands

Expected Research Benefits

Plasmotic Armor
Gorilla Delagator
Planetary Shield
Elephant Hide Fortress
Neutron Shield

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.
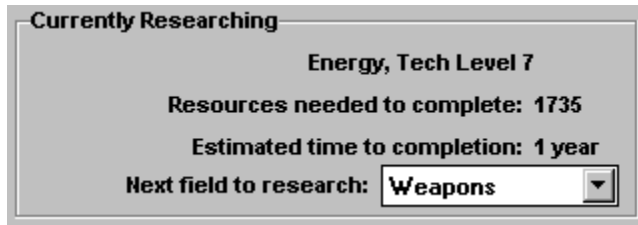
Currently Researching

Other Research dialog features
More Stars! Commands

Currently Researching

Energy, Tech Level 7

Resources needed to complete: 1735

Estimated time to completion: 1 year

Next field to research: Weapons ▾

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 partially applied against the next level's research expense.

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   < Back   Next >

Resource Allocation

Annual resources from all planets:	7810
Total resources spent on research last year:	4588
Resources budgeted for research:	15%
Next year's projected research budget:	3664

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 years 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.

0% 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.
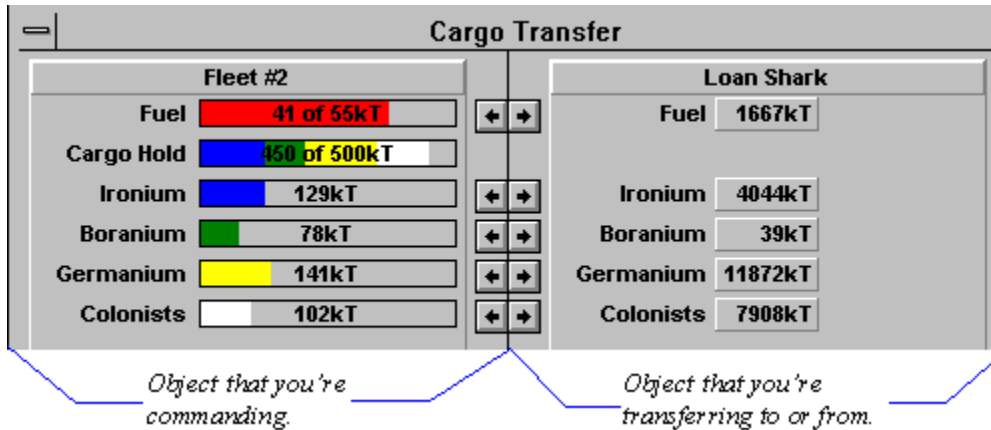
Next year's projected research budget

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)

Cargo Transfer dialogs

< Back   Next >

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.

Cargo Transfer

Fleet #2		Loan Shark	
Fuel	41 of 55kT	Fuel	1667kT
Cargo Hold	450 of 500kT		
Ironium	129kT	Ironium	4044kT
Boranium	78kT	Boranium	39kT
Germanium	141kT	Germanium	11872kT
Colonists	102kT	Colonists	7908kT

*Object that you're commanding.*   *Object that you're transferring to or from.*

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 Cargo Transfer dialog appears as shown below:
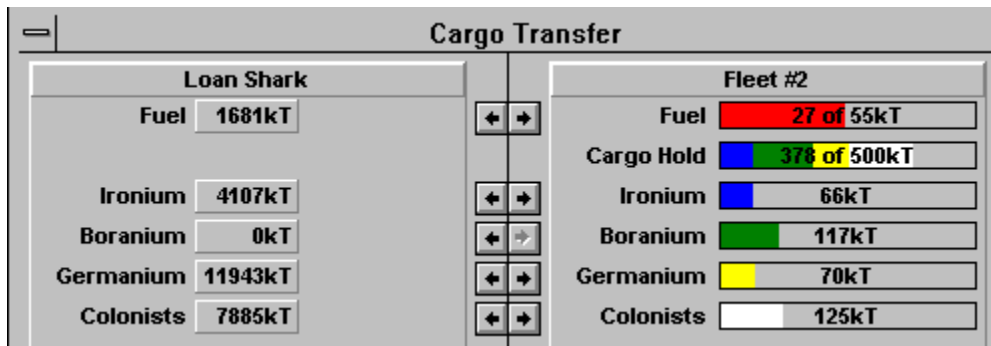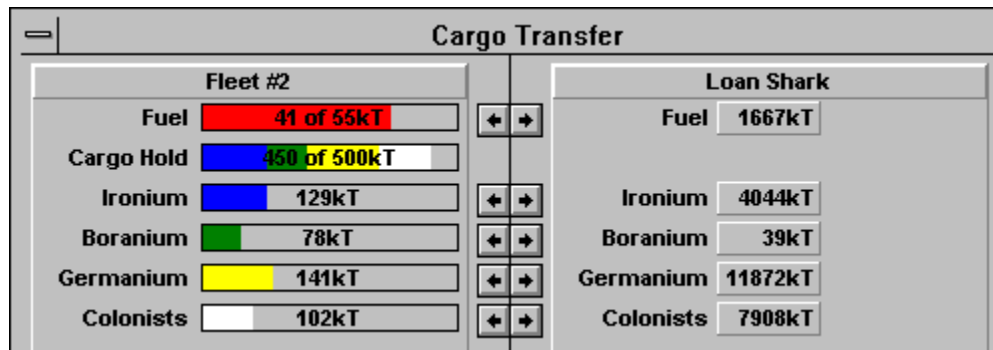

The numbers on the planet side of the dialog represent the total planetary supply of fuel, minerals and colonists. To transfer cargo between your planet and your fleet, do one of the following:

⇒   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 Cargo Transfer dialog appears as shown below:

Cargo Transfer		
Fleet #2		**Loan Shark**
Fuel — 41 of 55kT	← →	Fuel — 1667kT
Cargo Hold — 450 of 500kT		
Ironium — 129kT	← →	Ironium — 4044kT
Boranium — 78kT	← →	Boranium — 39kT
Germanium — 141kT	← →	Germanium — 11872kT
Colonists — 102kT	← →	Colonists — 7908kT

The numbers on the planet side of the dialog represent the total planetary supply of fuel, minerals and colonists. The gauge labeled Cargo Hold shows the combined cargo weight.
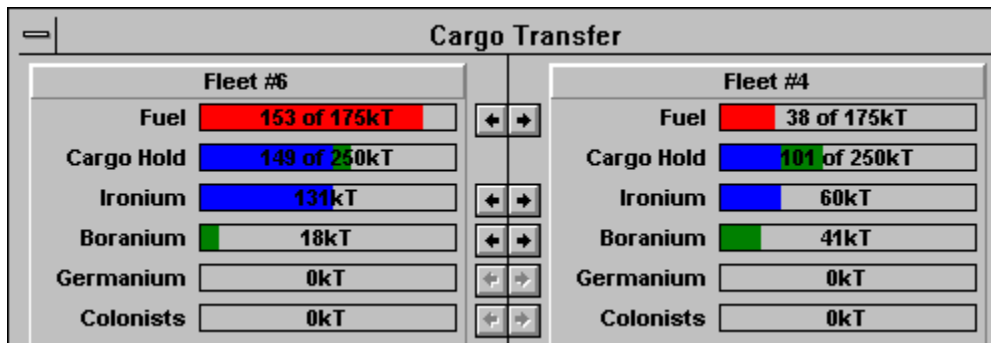
To transfer cargo between your planet and your fleet, do one of the following:

⇒   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 Cargo Transfer dialog appears:

	Cargo Transfer			
Fleet #6			**Fleet #4**	
Fuel	153 of 175kT	← →	Fuel	38 of 175kT
Cargo Hold	149 of 250kT		Cargo Hold	101 of 250kT
Ironium	131kT	← →	Ironium	60kT
Boranium	18kT	← →	Boranium	41kT
Germanium	0kT	← →	Germanium	0kT
Colonists	0kT	← →	Colonists	0kT

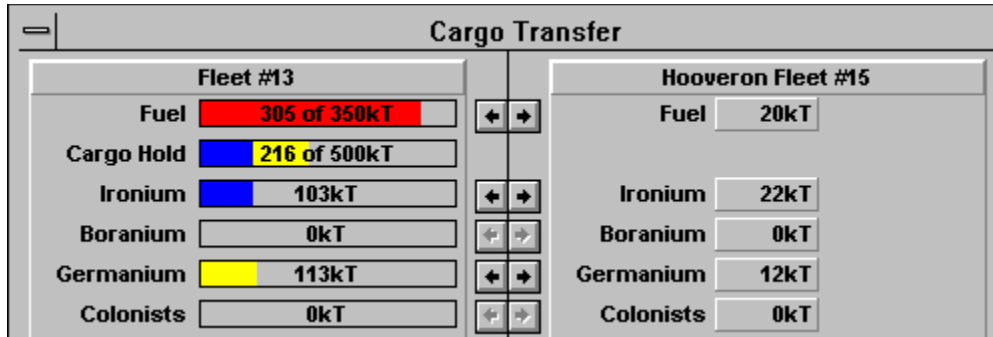The gauge labeled Cargo Hold shows the combined cargo weight.

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. The Cargo Transfer dialog appears:

In this dialog, you are not able to see how much fuel, minerals or colonists 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 just the amounts you transferred to them in their gauges.

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.

Ship Transfer dialog

< Back   Next >

More Stars! Commands

Use the ship transfer dialog to reassign ships to other fleets. While commanding a fleet, select another fleet in the Other Fleets Here tile, then click on **Ships**. The Ship Transfer dialog opens. The list of ships in each side of the dialog are all the ship types in the two fleets combined.

Ship Transfer

Fleet #8		Fleet #1	
Liliqution Freighter	6	Liliqution Freighter	0
Smaugarian Peeping Tom	3	Smaugarian Peeping Tom	8
Small Colonizer	2	Small Colonizer	5

OK   Cancel   Help

Click on the arrows to transfer ships between fleets.

Battle Plans dialog

More Stars! Commands

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 the 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 and tactics. You can modify, rename or delete an existing plan, or copy it and use it as the basis for a new plan.

Auto Defense
You can't rename or delete the Auto Defense plan. This is the default plan for all fleets and can't be changed.

Tactics and other options

Click here to display topics describing Battle Plan options for specific tactics, targeting and general strategy.

Learn more about Combat in these topics:

The Basics of Combat

The Guts of Combat

Battle VCR   < Back   Next >

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.
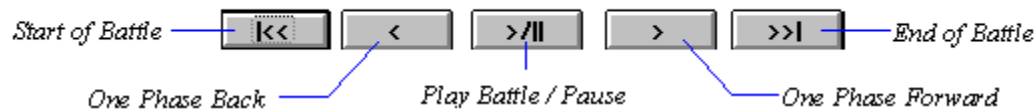
Phase 7 of 8

The Mensoids
Scout - Range 1
attacks the Hawks
Toothless Tiger
at (4, 3) doing
246 damage to shields
98 damage to armor.
Tactic: Optimal range

BATTLE STATUS

Active (attacking or retreating) ships.

Ships being attacked are shown in red

Damage detail.

Battle tactic used by the active ships.

Blue frames the token detailed in the selection

Selection: (5, 3)
The Mensoids
Scout - Range 1
Speed: 9   Movement: 5
Armor: 5351
Damage: 1@13%
Shields: (none)
Jamming: 73%
?

SELECTION

The selection details the active token during playback or any other token you click on.

Click here to see the design details of the ship type displayed in the selection.

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. 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.

⇒ **Left-click on a ship token to select it**. The battle status detail tells 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 .

Player Relations dialog

< Back   Next >

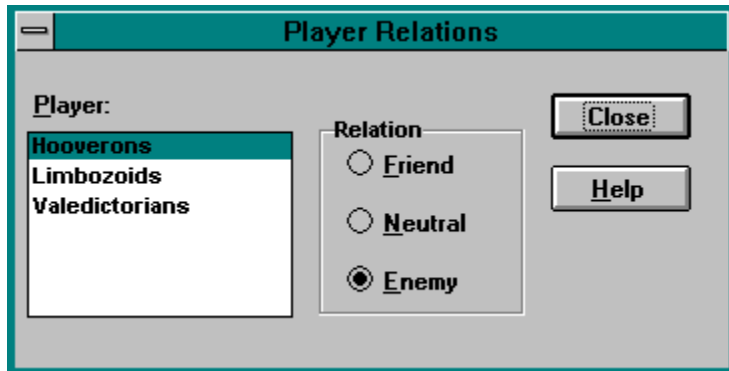**Multi-player Games Only**

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 Waypoint Task tile 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.

Rename Fleet dialog

< Back   Next >

More Stars! Commands
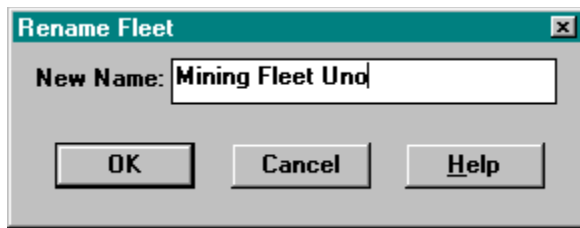
Use this dialog to rename the fleet displayed in the Command pane. Just replace the text showing the fleet's current name with your own more descriptive label.
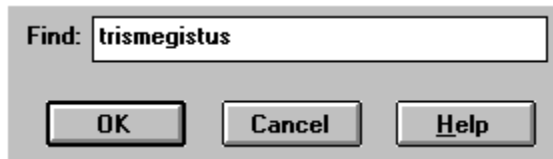
The "r" key also opens this dialog.

Find Planet or Fleet dialog
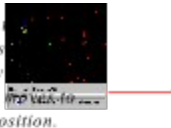
Use this command to find a planet or fleet quickly.

Find: | trismegistus |

[OK]   [Cancel]   [Help]

When *fleet is* *yellow* *arrow* *that position.*

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 using any format (i.e. fleet #58, fleet 58, #58, 58, etc..).

To find another player's fleet

⇒   Enter the fleet identification using this format:

Find: | tritizoid fleet #125 |
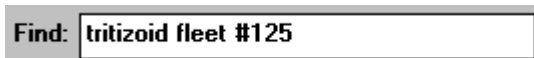
race name   the word "fleet"   #(fleet number).

Defaults dialog

< **B**ack   **N**ext >

More Stars! Commands

Defaults ☒

New Colonies:

Auto **B**uild: Mines then Factories ▼

☑ **C**ontribute only leftover resources to research
☑ **T**erraform planets with negative values
☑ **A**uto Terraform idle planets

Ships:

☐ New **a**rmed ships start with attack orders
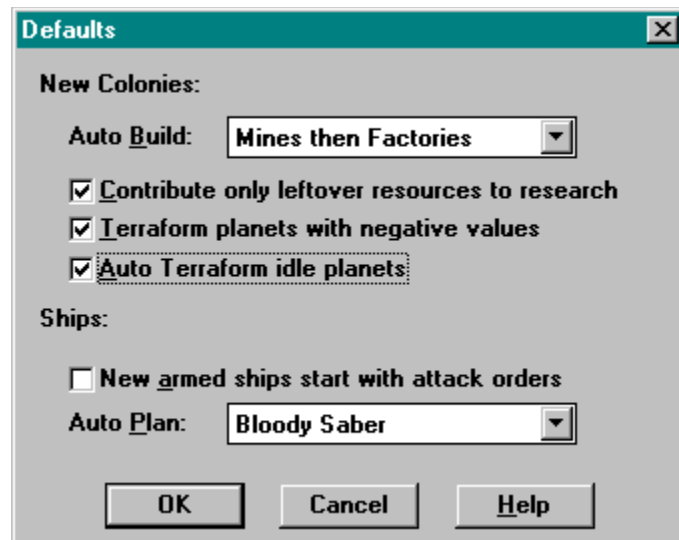
Auto **P**lan: Bloody Saber ▼

OK   Cancel   **H**elp

New Colonies - Auto Build

These default settings will apply to all newly colonized planets. It does not apply to colonies you establish by overcoming an opponent through ground combat.

To select a default:

1. Open the dropdown list and select a thing to auto-build.

2. Click on **OK**.

New Colonies - Auto Leftovers to Research

Select this default to divert excess resources to research on all newly colonized planets. This functions the same as the **Contribute only leftover resources to research** option in the Production dialog.

New Colonies - Auto Terraform

Select this default to add terraforming to the production queue of every new colony. The planet will be terraformed only for those environmental attributes which have a negative value. You must possess the terraforming technology needed to transform the factor that is out of range and the terraforming will continue only until the negative values reach zero. To continue terraforming you'll then have to add terraforming to the queue manually.

Auto Terraform Idle Planets

Select this default and planets with nothing else to do will perform terraforming if they have the ability to do so.

New Ships - Auto Attack

Select this default to specify that all armed ships will come out of production with attack orders. They are assigned the battle plan immediately following Auto Defense in the battle plan list. To view this plan, open the Battle Plans dialog.

Learn more about the things these defaults apply to:

Colonization

Custom Zip Orders dialog
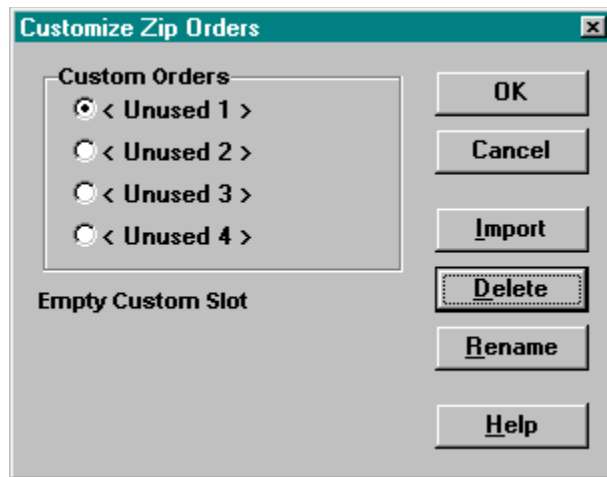
[More Stars! Commands](#)

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.

Reports < Back   Next >

Both the planet and fleet reports list all statistics for all your fleets and planets. Click on the labels to hide and show columns and to change the order in which that type of statistic is sorted.

You can also left-click on the name to go to that item or open the related dialog.

Right-click on statistics to display related popup information.

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.

Dumping Information to a Text File

To dump basic information about the universe, planets and fleets to an ASCII 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).

Score sheet   < Back   Next >

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 you 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 and victory conditions reports.

Host Mode dialog

< Back   Next >

More Stars! Commands

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 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
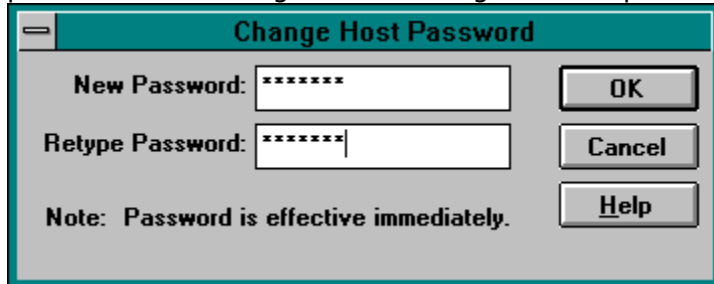
 Click to tell Stars! to automatically generate turns when all players have submitted their changes. Stars! will continue to poll the play directory, waiting for all players to submit their turns.

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

Password... Click on this button to create or change the host password. Player passwords are changed within the game. The password is limited to 16 characters.

Change Host Password		
New Password: *******		OK
Retype Password: *******		Cancel
Note: Password is effective immediately.		Help

Change Password dialog

< Back   Next >

[More Stars! Commands](#)

Multi-player Games Only

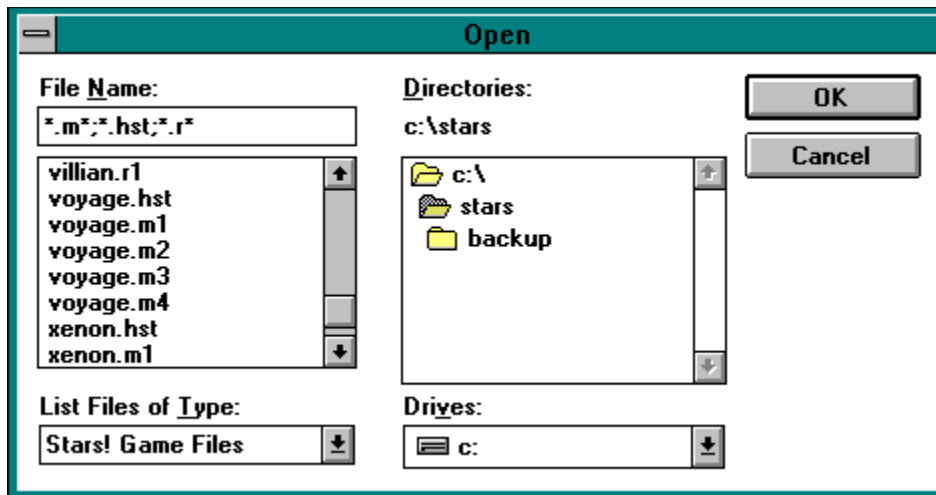This dialog allows you to create a new password for your race or to change an existing one. The password is limited to 16 characters. Passwords are not effective until the next turn has been generated.

File Open command

More Stars! Commands

This standard file browser dialog allows you to open files saved on your machine and on network drives. There are the three types of files that a host or player has access to:

◆ *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.

◆ *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.

◆ *name.rN files* -- 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 opens. 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.

Password Notes

Forgetting 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.

AIs
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.
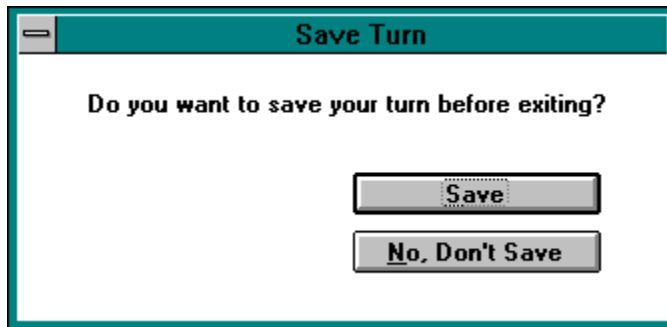
Save File commands

Saving a File

Use the **Save** command 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.

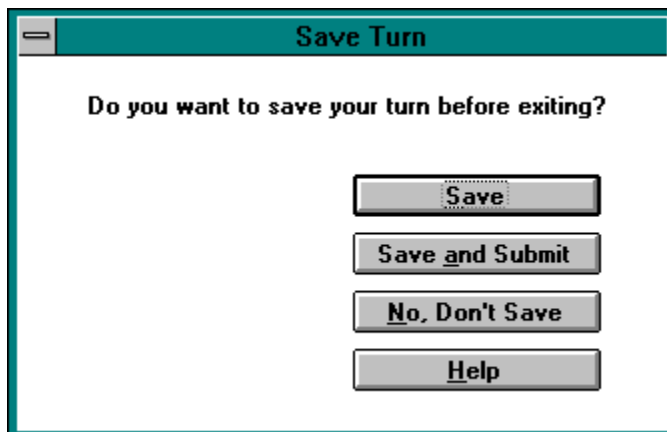If you close the game before saving you will see this alert:

```
┌─────────────────────────────────────────┐
│ ▬  │         Save Turn                   │
├─────────────────────────────────────────┤
│                                          │
│   Do you want to save your turn before   │
│   exiting?                               │
│                                          │
│             ┌──────────────┐             │
│             │    Save      │             │
│             └──────────────┘             │
│             ┌──────────────┐             │
│             │ No, Don't Save│            │
│             └──────────────┘             │
│                                          │
└─────────────────────────────────────────┘
```

Save and Submit

Multi-player Games Only

Use the **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 will see this alert:

```
┌─────────────────────────────────────────┐
│ ▬  │         Save Turn                   │
├─────────────────────────────────────────┤
│                                          │
│   Do you want to save your turn before   │
│   exiting?                               │
│                                          │
│             ┌──────────────┐             │
│             │    Save      │             │
│             └──────────────┘             │
│             ┌──────────────┐             │
│             │ Save and Submit │          │
│             └──────────────┘             │
│             ┌──────────────┐             │
│             │ No, Don't Save│            │
│             └──────────────┘             │
│             ┌──────────────┐             │
│             │    Help      │             │
│             └──────────────┘             │
│                                          │
└─────────────────────────────────────────┘
```

Close File/Exit Game commands

More Stars! Commands

The **Close** command closes the current game but does not exit Stars!. You'll be prompted to save any unsaved changes. You can use the **File** (**Open**) command to open a new game.

The **Exit** command exits Stars!. As with Close, you're prompted to save unsaved changes.

Tutorial command

More Stars! Commands

This Help command begins the tutorial game 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.

If you're already in the middle of a game, you're asked if you wish to save your changes.

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.

AIs and Advantage Points

The easy AIs receive substantially fewer advantage points than you do. The expert AIs receive quite a few more advantage points than you. The Standard and Hard AIs 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 withut using fuel. This number appears in the Fleet Composition tile for the selected fleet.

This speed appies only to travel between waypoints, not battle.

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.

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).

Initiative and Speed

Initiative is order of movement in battle (ranging from 0 to 15), 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.

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

One round of battle is each token getting a chance to move and fire.   Within a round each token moves from slowest to fastest then each token fires from fastest to slowest.

Ship Classes

Unarmed ships -- any design that has no weapons.

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.

Setting Up Play

[Starting a Single Player Game](#)

[Starting a Multi-Player Game](#)

[Playing with a Custom Race](#)

[Hosting a Network Game](#)

[Transferrring Game Files using a Modem or Email](#)

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](#)

[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](#)

[View a Battle in Space](#)

[View an Enemy Fleet Summary](#)

[View Enemy Ship Designs](#)

How to Design Ships...

How to Manage Fleets...

[Name Fleets](#)

[Split and Merge Fleets](#)

[Find a Single Fleet](#)

[Find a Specific Fleet Composition](#)

[Scrap Fleets](#)

[Jettison Cargo](#)

[Switch Between Fleets](#)

How to Colonize...

Planet Tiles

[Planet tile](#)

[Production tile](#)

[Status tile](#)

[Minerals on Hand tile](#)

[Fleets in Orbit tile](#)

[Starbase tile](#)

Fleet Tiles

[Fleet tile](#)

[Location tile](#)

[Fuel and Cargo tile](#)

[Fleet Composition tile](#)

[Other Fleets Here tile](#)

[Fleet Waypoints tile](#)

[Waypoint Tasks tile](#)

Waypoint Tasks

[Transport](#)

[Attack](#)

[Colonize](#)

[Remote Mining](#)

[Merge with Fleet](#)

[Scrap Fleet](#)

[Lay Mine Field](#)

[Sweep for Mines](#)

[Patrol](#)

Scanner Topics

Battle Details

Other Races

[Antethereals](#)

[Humanoids](#)

[Insectoids](#)

[Nucleotids](#)

[Rabbitoids](#)

[Silicanoids](#)

Data Tables

Area Weapons   Orbital Devices
Armor   Planetary
Beam Weapons   Robot Miners
Bombs   Scanners
Torpedoes   Shields
Engines   Specials
Hulls   Starbases
Mine Layers   Terraforming

Planets

Inhabited Planets

Population

Minerals

Mines

Factories

Building Defenses

Planet-based Scanners

Orbital Devices

Terraforming

Inhabited Planets

[Population](#)

[Minerals](#)

[Mines](#)

[Factories](#)

Terraforming

Orbital Devices

[Starbases](#)

[Stargates](#)

[Mass Drivers](#)

Production

How Production Works

Adding an Item to the Queue

Removing an Item from the Queue

Clearing the Production Queue

Unblocking a Queue

Using Auto Build

Production Strategies

Conditions that Affect Production

Research

Ship Design

Fleet Management

[Assembling Fleets](#)

[Setting the Fleet's Speed](#)

[Finding a Single Fleet](#)

[Finding a Specific Fleet Composition](#)

[Switching Between Fleets](#)

[Naming Fleets](#)

[Using Fuel](#)

[Rendezvousing Fleets](#)

[Transferring Cargo](#)

[Jettisoning Cargo](#)

[Splitting and Merging Fleets](#)

[Scrapping Fleets](#)

Navigation

Colonization

Mining

[Mining Colonized Worlds](#)

[Remote Mining](#)

Freight

[Shipping Freight](#)

[Creating a Custom Transport Zip Order](#)

[Flinging Mass Packets](#)

Combat

Fleet-to-fleet Combat

Bombing Planets

Mineral Packet Bombardment

Ground Combat

Laying Minefields

Starbase Combat

Declaring Friends and Enemies

Battle Plans

Viewing a Space Battle

Viewing Enemy Fleets

Viewing Enemy Ship Designs

The Guts of Combat.

Scanning

File menu

[New...](#)

[Custom Race Wizard...](#)

[Open...](#)

[Close](#)

[Save](#)

[Save and Submit](#)

[Exit](#)

View menu

[Find...](#)

[Zoom](#)

[Window Layout](#)

[Race...](#)

[Game Parameters](#)

Turn menu

[Wait for New](#)

[Generate](#)

Commands menu

[Defaults...](#)

[Ship Design...](#)

[Research...](#)

[Battle Plans...](#)

[Player Relations...](#)

[Change Password](#)

Report menu

[Planets...](#)

[Fleet...](#)

[Score...](#)

Help menu

[Introduction](#)

[Player's Guide](#)

[Technology Browser](#)

[Registration Information](#)

Custom Race wizard

Advanced Setup

[Step 1: Specify the Universe](#)

[Step 2: Specify the Players](#)

[Step 3: Specify Victory Conditions](#)

Scanner Views

[Normal view](#)

[Planet Value view](#)

[Minerals at Planet view](#)

[Population View](#)

[No Player Information view](#)

Production dialog features

[Production Inventory](#)

[Production Queue](#)

[Previous and Next Queues](#)

[Auto Build](#)

[Contribute Only Leftover Resources to Research](#)

Ship Designer features

[Dialog View](#)

[Hull Schematic](#)

[Hull Component List](#)

Research dialog features

[Technology Status](#)

[Expected Research Benefits](#)

[Currently Researching](#)

[Resource Allocation](#)

Minefields

[Laying Minefields](#)

[Sweeping Minefields](#)

[Types of Mines](#)

Battle Plans

[Battle Plan Tactics](#)

[Targeting](#)

[General Battle Plan Options](#)

[Making a New Battle Plan](#)

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

Messages Pane

What is Stars?

Stars! is a full-blown, turn-based interstellar strategy game for Microsoft Windows that's fast-paced and simple to play yet capable of carrying out a huge and subtle variety of strategies. You'll build starships, discover and colonize new planets, research new technologies, manage the essential elements of world economies, defend your empire and (no guarantees here) destroy all your enemies. One or more people can play, on a single machine or across a local area network, or by transferring turn files using modems, email or computer bulletin boards.

So how do you get started?

[You are the Master Strategist](#)

[Stars! World Wide Web Site](#)

You are the Master Strategist

It's the 2400th year of the Planetary Era, and the first year of the Galactic Era. You guide the destiny of your race. The Stars! control panels give you the ability to command planets 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 of 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 **Play 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 a host of (other) star-hungry races.

Stars! World Wide Web Site

Be sure to check out the official Stars! Web site at **http://www.webmap.com/stars!**. There you'll be able to purchase the registered version of Stars!, download the latest shareware version, view the FAQ and other Stars! documentation, and connect to sites hosting multi-player games.

You can also send feedback directly to the authors via the Web site. Or just email them at **stars@webmap.com**.

Keyboard Shortcuts

Press	*To*
F1	Open this **Player's Guide**.
F2	Open the **Technology Browser**.
F3	Open the **Planet Summary Report**. Second press opens the **Fleet Summary Report**. Third press closes the report window.
F4	Open the **Ship Design** dialog.
F5	Open the **Research** dialog.
F6	Open the **Battle Plans** dialog.
F7	Open the **Player Relations** dialog.
F8	Open the **View Race** dialog.
F9	Generate a **new turn**, immediately.
F10	Display your **score**.
Esc	Closes the displayed **report**.
CTRL F	**Find** a planet or fleet in the Scanner.
+ / -	The plus (+) key zooms the Scanner in. The minus (-) key zooms back out.
Up arrow Down arrow	**Up arrow** displays the previous message in the Messages pane. **Down arrow** displays the next message.
Home / End	Display the first and last messages in the Messages pane.
Enter	Go from the Messages pane to the **related dialog or location**
Backspace / Delete	Deletes the selected waypoint.
p / n	Displays the previous or next planet or fleet in the Command pane.
P / N	Displays the previous or next planet with a starbase in the Command pane.
v	Flash cursor in the Scanner pane.
f	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.

What's New in Stars! Version 2.0

Stars! 1.x players -- we listened to your feedback and here's our response - a new version of Stars! that's packed with features you asked for: minefields and reports, along with stargates, wormholes, and powerful mass drivers (and one or two surprises). We made winning conditions configurable. We enhanced existing elements of the game, increasing the number of items in the Technology Browser by 50%, revamping race creation, and made those AIs a bit harder to handle (they still don't cheat). There's more than that, over 200 major and minor enhancements you can learn about below or better yet, by playing the game.

Welcome to the new Stars! universe: deeper, darker and more complex (and treacherous) than ever before. Enjoy -- we look forward to hearing from you (stars@webmap.com).

Race Creation

Primary Racial Traits

You can now choose from one of eight primary racial traits, each with a unique set of starting advantages, exclusive abilities and technology:

Hyper-Expansion

Super-Stealth

War Monger

Inner-Strength

Space Demolition

Packet Physics

Interstellar Traveller

Jack of All Trades

Secondary Racial Traits.

You can give your race even more depth by choosing any of the following secondary traits:

Improved Fuel Efficiency

Total Terraforming

Advanced Remote Mining

Improved Starbases

Jump Start

Mineral Alchemy

No Ram Scoop Engines

Balky Engines

Only Basic Remote Mining

No Advanced Scanners

Low Starting Population

Regenerating Shields

Other New Custom Race Features

◆ New research option starts all 'poor' fields of research at Tech 3.

◆ Races get a 400 or 1000 point bonus for taking a 2% or 1% growth rate respectively.

◆ Races have a new way to <u>spend left over advantage points: Mineral concentrations</u>. This comes in handy when everyone's home world starts with low mineral concentrations.

Minefields

New in the Stars! weapons arsenal are three types of mines. There are also new tasks for <u>laying</u> and <u>sweeping mines</u>.

◆ Normal (just goes boom)

◆ Mass discriminator (goes boom only for big ships)

◆ Speed Trap (sticky mine - stops you dead in the water)

Scanner Technology

Scanners are now <u>additive, like cloaks</u>.

New ship based Scanners

Pick Pocket scanner can see contents of enemy fleet cargo holds.

Robber Baron scanner can see surface minerals on enemy planets.

New scanning abilities

Mass packets act as pen-scanners for the Packet Physics race.

Mine fields act as normal scanners for the Space Demolition race.

Engines

Ramscoop Improvements

Ramscoops can create fuel.

Ramscoops interact with minefields

Warp 10

All engines can go Warp 10. No more brogueish whining from down below.

Most engines cause damage to ships at Warp 10.

There is a new Warp 10 engine available to no-ramscoop races.

Wormholes

They're there -- if you can find them. They're a <u>fast, free way to travel</u> -- if you feel lucky.

Basic Wormhole Features

Ends move independently

Range from Very Stable to Very Unstable

Consider the jiggle factor - it could shake you to parts unknown

Starbase Enhancements

Starbases are no longer a just a yellow dot on the Scanner.

New Starbase Hulls

There are 4 new starbase hulls with slots for weapons, armor, and special items:

- Orbital Fort: No ship building, one orbital slot plus weapons/armor/shields.
- Space Dock: Limited ship building, one orbital slot plus w/a/s.
- Starbase: Unlimited ship building, 2 orbital slots plus w/a/s.
- Ultrabase: Unlimited ship building, 2 orbital slots plus w/a/s.

Other Starbase Features

- Starbases take part in combat
- New starbase tile in the command pane
- Starbases can hold Stargates and Mass Drivers

Stargates and Mass Drivers

Stargates

- Stargates are orbital devices linked to starbases. They provide cargo-free ships with fuel-free, single year transport between stargates that you own. Range and mass are determined by the origin and destination stargate capacities.
- Inter-stellar Traveler's who have starbases with stargates can scan any planet in stargate range which also has a stargate.

Mass drivers

- Mass drivers are orbital devices linked to starbases. They provide a fuel-free method of transporting mineral cargo packets between planets. They can also be used as a long range weapon. Damage works like a comet strike except it is possible to completely kill a colony.
- If you can intercept a mass packet in flight you can steal from it.

Battle

Battle plan changes

Each round of battle now consists of two parts:

- Movement: Every token moves from slowest to fastest.
- Attacks: Every token attacks from fastest to slowest.
- You can delete battle plans now.
- Spread out now also makes tokens prefer squares which have not yet been occupied.

New battle plan tactics

- Lightning strike. (initiative + 4, armor and shields / 4)
- Defensive advance. (initiative - 4, armor and shields + 25%)

- Self Destruct long range. (blows up as soon as damage will be done to the target)
- Self Destruct medium range. (gets to two squares away before blowing up)
- Self Destruct close range. (gets to point blank range before blowing up)

New battle plan targets

- Weakest opponent.   (picks the weakest token to attack)
- Strongest opponent.   (picks the strongest token to attack)
- Best Match.   (picks the strongest token this token can probably defeat) Starbase.

Starbases take part in combat

- They don't move but have an initiative of 6 (7 for the War Mongers)
- They can be targeted like anything else.

VCR improvements

Many more statistics about ship state and battle tactics are now displayed. Battle animation is improved.

Fallout from battles

Cargo is dumped as a mineral packet (salvage).

Salvage is free game for anybody nearby with a freighter.

Survivors of battles in which ships beyond their tech level in one or more fields got killed have a 50% chance to advance one tech level in one field.

Cloaking affects battle

Cloaked ships which move after firing are less likely to be targeted.

A Tachyon Detector device can reduce the effectiveness of opponent's cloaks.

Weapons Adjustments

Beams:

- Beam weapons now have a range of 4 or less.
- Beam weapons are now spread over the entire 26 tech level range.
- Beam weapons tend to be more powerful than they used to be.

Torpedoes:

- Torpedoes tend to be less powerful.
- 1/4 all torpedo damage goes direct to armor, 3/4 to shields.
- Now only 1/8 of all torp damage is applied as collateral damage.
- Torpedoes can now be deflected using jammers.
- Deflected torpedoes still cause collateral damage.
- Torpedoes can now be fired from point blank range.
- Starbases don't take collateral damage from torpedoes unless they were the target.

Area weapons:

- Weapons have a range to the center of the blast.

◆ Weapons have a radius of the blast.

◆ Weapons damage every token in every square in the blast area.

◆ Damage is reduced based on distance from center of blast. (1/2 at 1, 1/4 at 2, etc.)

Ray weapons:

◆ Ray Weapons now have a range.

◆ All tokens on a line through target square take damage.

◆ All tokens one square away take full damage.

◆ Damage is reduced based on distance. (1/2 at 2, 1/4 at 3, etc.)

◆ Tokens beyond target square still take damage if in range.

New Weapon Types

Jammers deflect incoming torps and are additive. The Rail Gun, designed for use on starbases, behaves like an area affect weapon.

New Damage Model

Damage is displayed as C @ P% where C is the count of ships and P is the percent of damage they have.

Reports

You can now generate detailed planet, fleet and score reports.

New Waypoint Tasks

◆ Merge With Fleet

◆ Lay Mines

◆ Sweep for Mines

◆ Patrol

◆ Custom Zip Orders

Ship Hulls

New Hulls

◆ Mini Minelayer: requires the Space Demolition primary racial trait.

◆ Super Minelayer: requires the Space Demolition primary racial trait.

◆ Meta Morph: requires the Hyper-Expansion primary racial trait.

Existing Hull Enhancements

◆ General Purpose slots can now hold mine laying pods.

◆ Fuel Transport has a built in scoop that collects 2kT fuel / ly traveled. Ships in the same fleet as this hull heal 5% faster.

◆ Super Fuel Xport has a built in scoop that collects 3kT fuel / ly traveled. Ships in the same fleet as this hull heal 10% faster.

Terraforming

There is now a single production queue item for <u>Terraforming</u>. It always improves the environmental value which will increase the planet value the most. If you can do Temp +4 and Rad -2 than you can add up to 6 Terraform items to the queue.

Total Terraforming can now get you up to +/- 30% at tech 25.

Total Terraforming races can now terraform for 30% less resources than other races.

Scanner Pane

◆ Probable enemy ship paths are displayed when you select them. Clicking on enemy fleets displays their travel vector with ticks to indicate their yearly rate of travel at the current speed.

◆ New Mine Fields overlay shows minefields you know about.

◆ New Idle Fleets overlay filters out fleets with orders.

◆ Fleet masses for enemy fleets are now reported more correctly.

◆ Mass packets can be seen if in scanner range. Clicking on anybody's mass packet displays its travel vector with ticks to indicate its yearly rate of travel at the current speed.

◆ Wormholes can be seen if in scanner range.   (As if 75% cloaked to normal scanners)

◆ Fleet triangles now point in roughly their direction of travel.

◆ A new Zoom mode of 38% has been added.

◆ Planets now have indicators for Starbases, Mass Accelerators and Stargates.

Misc. Improvements/Changes

Naming fleets

There is a <u>Rename button in the Fleet tile</u>. Other players won't see the new names.

Production dialog

New buttons to move items Up and Down in the queue.

There is now a single queue item for Terraforming.

All Auto-Build options which require minerals will do necessary mineral alchemy if player has that ability.

New Auto-build option: Factories then Mines.

Defaults dialog

You can now pick the default battle plan. This is the plan that is given to fleets when you pick the Attack or Patrol task. It is not used for fleets without attack orders that get attacked. They still use the Auto Defense plan.

You can now tell idle planets to terraform if necessary. If checked planets with nothing in the queues and auto build satisfied will automatically add terraforming to the queue if it will improve the planet.

Research dialog

There is now a dropdown which allows you to choose the next field of research to change to once you have completed the next level of the field you are currently working on. Choosing 'lowest field' will continually shift research to the field with the lowest tech value after each

advance.

Planets with Auto-Build orders and empty queues are now more closely calculated when doing the estimated resources for next year.

Parts/Tech Browser

Many changes here. Don't assume any parts are untouched. In general, parts are now spread over the entire 26 tech levels.

New Super Fuel pod and Super Cargo pod carry 100kT each.

Overthruster now requires Propulsion 12.

New part categories: Area Weapons, Mine Layers, Starbase Hulls, Orbital

Universe Creation

Advanced Starting Options

Beginner - Unlimited Minerals: All planets begin with 40,000kT of each mineral. Mineral densities are also improved. Option unbalances game play, but makes things easier for beginning players who don't want to deal with resource allocation.

Public Player Scores. After 20 years all players scores are known to all other players.

Winning conditions

Choose from one to eight configurable winning conditions, then decide how many the winner must satisfy.

New View Dialog: Game Parameters

Players can view the universe parameters (New game dialog) during game play much like View Race.

Keyboard

New keyboard Shortcuts:

◆ Shift-N/Shift-P take you to the next and prev planet with a starbase.

◆ r / R brings up the fleet rename dialog.

◆ v / V flashes the cursor in the Scanner pane.

Screen Layout

The Stars! screen is divided into four panes:

The Command pane (upper left on the Stars! screen) is where you assign orders to your fleets and planets, including production, transfer and waypoint orders.

The Messages pane contains messages sent to you by Stars! and other players, and allows you to send messages to other players.

The Scanner pane (upper right on the Stars! screen) is your view of the universe. It's where you assign fleet routes and view different types of planet and fleet information.

The Selection Summary pane summarizes what you know about the object selected in the Scanner.

Read more about the Stars! screen:

Changing the Basic Layout
Shrinking and Growing Panes
Moving and Collapsing Tiles
Visit the Screen

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.

Fleet #2

Prev

Next

Click here to collapse a tile.

Fleet #2

Click here to expand a tile.

Commanding a Planet

The Command pane is your command interface between you and 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.

Mayberry	
	Prev
	Next

Fleets in Orbit	
Fleet #3	
Fuel	150 of 150kT
Cargo	0 of 0kT
Goto	Cargo

Minerals On Hand	
Fuel	3807kT
Ironium	3678kT
Boranium	3664kT
Germanium	756kT
Mines	425 of 759
Factories	552 of 759

Production	
Factory	1
Space Station (upgrade)	1
Destroyer	2
Cotton Picker	1
Teamster	1
Completion:	1 year
Change	Clear

Status	
Population	759,400
Resources/Year	787 of 1311
Scanner Type	Scoper 150
Scanner Range	150 l.y.
Defenses	10 of 100
Defense Type	SDI
Def Coverage	14.2%

| Space Station (2)	
Dock Capacity	Unlimited
Armor	5400dp
Shields	1600dp
Damage	None
Mass Driver	Warp: 7
Destination	Wingnut
Set Dest	Warp 7

Planet tile

This tile shows the planet currently selected to command. Switch to commanding to other planets you control by clicking on **Prev** and **Next**.   If you hold down on the shift key while clickin on the Prev or Next button, the previous or next planet with a starbase will be selected.

Production tile
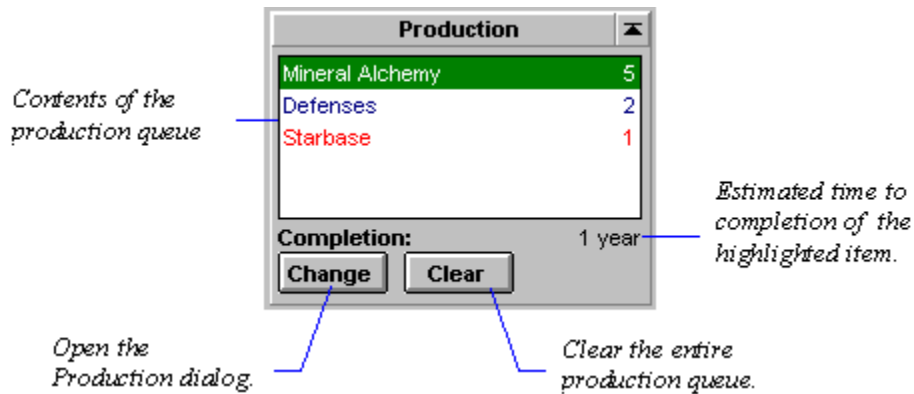
The Production tile displays the contents of the production queue for the planet you are commanding. It is also your primary entry point into the Production Dialog, where you set up production for each of your planets.

Green items will be produced at the end of the current turn.

Blue items will have at least one of the items shown produced at the end of the current turn.

Black items require more than one turn before anything is produced.

Red items will never be built, due to a lack of required minerals.

⇒ To open the Production dialog, click on **Change**. Use this dialog to view and change the production queue for one or more of your planets

⇒ To remove everything from your production queue, regardless of completion status, click on **Clear**. Minerals and resources spent on partially completed items are lost if an item is removed before completion.

Status tile

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%

Population Status

Planet's Scanner Status

Planet's Defense Status

Left-click in each section of the Status tile to display more information about the currrent population, scanners and defenses. Learn more about the different scanner and defense types by visiting the Planetary section of the Technology Browser (press F2).

Population Status

Population -- How many of your people live on the selected planet.

Resources/Year -- This number is based on the size of the planet's population, your colonists' efficiency, and the number of factories on the planet. You increase resources by increasing the population and, if the population growth potential is less than 100%, by terraforming the planet. Each year you get one resource for every *N* colonists, and *N* resources for every 10 factories you've built. Of course, factories also cost resources to build.

The population growth potential is based on a maximum population size of 1,000,000. Maximum growth occurs only on planets that are 100% optimum for your race. The Value in the Selection Summary pane indicates the percentage of the maximum number of your people the planet will support.   Certain racial traits can increase or decrease this potential maximum population.

To learn how many colonists it takes to generate one resource and how many resources 10 factories can create, open the View Race dialog to page 5 (press F8, click on **Next** 4 times.)

Planet's Scanner Status

Scanner Type -- Type of scanner deployed on the planet surface.

Scanner Range -- Range of the scanner in light years.

Planet's Defense Status

Defenses -- Number of defenses deployed out of the maximum you can operate, given your population.

Defense Type -- Current technology of the defenses.

Defense Coverage -- Estimates how many of an enemy's bombs and troops the current defenses will stop.   Defenses also protect planets against mineral packet bombardment.

Learn more about:

Minerals on Hand tile

Minerals On Hand	⏶
Fuel	3697kT
Ironium	190kT
Boranium	446kT
Germanium	152kT
Mines	10 of 28
Factories	10 of 28

Minerals available for immediate use.

Available and possible mines and factories.

Left-click on each statistic in the Minerals on Hand tile to display more information about the planet's mineral supply, mines and factories.

Mineral Statistics

This tile lists type and quantity of minerals on the planet surface, including fuel. These minerals are ready for immediate use in production. The total mineral supply, both above and below the surface, is displayed in the mineral content graph of the Selection Summary pane and is also available by left-clicking on each of the values in this tile.

Mine and Factory Statistics

The current number of mines and factories on this planet and the total number that you can currently operate are displayed. The number you can operate is determined by your current population. Since your population changes from year to year, the maximum number your people can operate will also change. To determine how many mines X number of your colonists can operate, look at page 5 of the View Race dialog.

In the picture above, 10 out of a maximum of 28 mines and factories currently exist. This means that the current population can operate 28 of each facility. If more than 28 mines or factories are built, they will sit idle until the population increases.

Learn more about:

Mining
Factories

Fleets in Orbit tile

Choose a fleet from this list.

Fleets in Orbit

Fleet #2

Fuel   50 of 100kT

Cargo   0 of 25kT

Goto   Cargo

Click and drag to transfer fuel between the fleet and planet.

Click on Goto to command the fleet.

Click to transfer cargo between the fleet and planet.
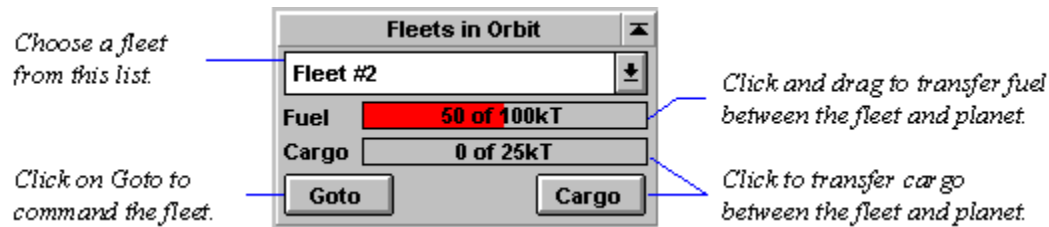
The fleet dropdown lists all fleets in orbit of the planet you are currently commanding. Fleets you own are listed in black. If you own the fleet, you can transfer any amount of fuel and cargo between the fleet and planet, limited only by the carrying capacity of the fleet.

Fleets belonging to other players are listed in red. You can transfer fuel and cargo to another player's fleet, and, if you wish, transfer up to that amount back to your planet. Once the turn is over, however, that cargo belongs to them.

⇒   To command a fleet you own that is shown in the tile, click on **Goto**.

⇒   To open the dialog for transferring cargo between the planet and the fleet, click on the Cargo gauge or the **Cargo** button.

⇒   To fuel the ship, click in the Fuel gauge and drag the cursor. Alternately, click on **Cargo** and use the Transfer dialog.

    In small screen layout, the Fuel and Cargo gauges aren't displayed. Click on the **Cargo** button to display the cargo list.

Starbase tile

*Click to display
the schematic.*

*Maximum safe
packet speed.*

*Click on the
destination in
the Scanner,
then click here.*

*Click here to set
the packet speed.*

The Starbase tile describes the starbase orbiting the selected planet, and the mass driver attached to the starbase. You also use this tile to set the destination of the mass driver and the speed at which the packets will be launched.
If the speed is higher than the maximum safe speed specified in the tile, the packet decays during travel: 1 warp level over the maximum = 10% decay per year traveled; 2 warp levels = 20% decay/year, 3 warp levels = 50%/year.
When you set the mass driver speed, notice that the gauge color is purple as long as the speed is safe, yellow when the speed is just over the limit, and red when you reach the maximum decay rate.

Learn about:

Starbases
Mass Drivers

Commanding a Fleet

The Command pane is your command interface between you and 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.

Fleet #2	
	Prev
	Next

Garfunkel

Goto	Xfer

Fleet Waypoints

Garfunkel
Utopia

Coming From	Garfunkel
Distance	55.04 Light Years
Warp Factor	Warp 5
Travel Time	3 Years
Est Fuel Usage	7kT
☐ Repeat Orders	◆

Waypoint Task

Colonize

Note: All ships in the fleet will be dismantled to provide supplies for the colonists.

Fuel & Cargo

Fuel	40 of 100kT
Cargo	25 of 25kT
Ironium	0kT
Boranium	0kT
Germanium	0kT
Colonists	25kT

Fleet Composition

Ships In Fleet	1
Small Colonizer	1

Best Warp	5
Est. Range	330 l.y.
Percent Cloaked	38%

Split	Split All	Merge

Other Fleets Here

Fleet #3

Fuel	20 of 50kT
Cargo	0 of 0kT

Goto	Ships	Cargo

Fleet tile

Click here to command your other fleets.

Click here to rename the fleet.

Use the **Prev** and **Next** buttons to display each of your fleets in the Command pane, allowing you to give orders to that fleet. The picture in the tile indicates the most common ship in the fleet or the largest type of ship in the fleet.
Use the **Rename** button to give your fleet a new name.

If a fleet contains more than one distinct ship type, a small plus sign appears for each type not currently displayed.

Location tile

Click Goto to command the planet you currently orbit.

Orbiting Cherub

Goto   Xfer
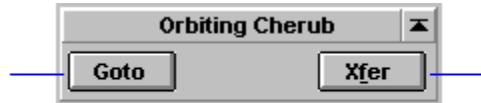
Click here to transfer cargo between your fleet and planet.

This tile indicates whether you are in orbit or in deep space. If the fleet is in orbit, the planet name is displayed in the title bar. Here, the location tile shows that the fleet is in orbit of the planet Cherub.

Selecting **Goto** switches to commanding the planet you're orbiting. The **Goto** button is disabled (shaded) if you don't own the planet.

If the fleet is in Deep Space, the **Jettison** button is displayed, allowing you to donate your fuel and cargo to the cosmos.

> **Tip**: Jettison cargo 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.

Learn more about:

Fuel and Cargo tile
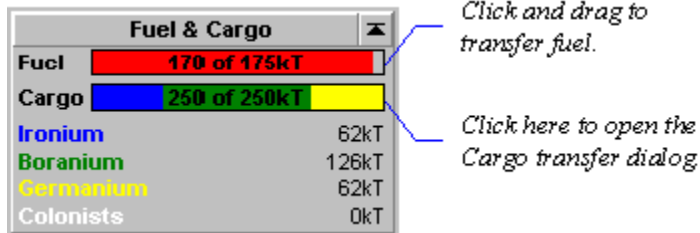
Fuel -- The Fuel gauge shows the current and maximum fuel level of the fleet. Here, 40 kT of fuel is present in a 100kT tank.

⇒ To change the fuel level, left-click in the gauge and drag the cursor. You must be orbiting a planet you own to load fuel. You can also give fuel to planets that you don't own. If you decide that's a bad idea, after the fact, you can transfer the fuel back to your fleet. If your location is deep space, you can only dump fuel using this dialog.

Cargo -- The Cargo gauge shows the total amount of cargo loaded and the total cargo capacity of the fleet. The exact amount of each type of cargo loaded is listed below the gauge. In the picture, the cargo hold is full of colonists.

⇒ To display the dialog for transferring cargo, left-click in the Cargo gauge. If your location is in deep space, you can only dump cargo using this dialog.

In medium and large screen layout, the exact amount of cargo is displayed under the gauges. In small screen layout, you'll need to click in the Cargo gauge to display the cargo list.

Fleet Composition tile

Fleet Composition	⏫
Ships In Fleet	1
Small Colonizer	1

Click on the ship name to display the ship design.

Best Warp	5
Est. Range	330 l.y.
Percent Cloaked	38%
Split	Split All	Merge

Fleet stats: speed using 100% of fuel, range at that speed, and the cloak strength
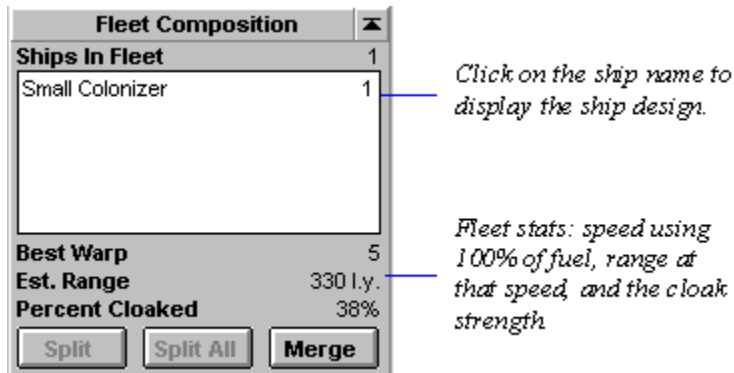
This tile shows the number and type of each ship in the selected fleet. This fleet contains a ship with the Small Colonizer hull type, with a recommended top speed of warp 5 (anything faster uses fuel at a rate of more than 120%) and an estimated range of 330 light years at that speed.

⇒ To display the specific design of a ship, click on the ship name. If the fleet name is in red, the ship has been damaged in battle. When you click on the name of a damaged ship, the amount of damage is listed in the popup in red.

⇒ To break the selected fleet into smaller fleets of a single ship each, click on **Split All.**

⇒ To break the selected fleet into two fleets, click on **Split**.

⇒ To join the selected fleet with all other fleets in the same location, select the **Merge** button.

If you want transfer some but not all of the ships to or from another fleet, select the second fleet in the Other Fleets Here tile and click on **Ships**.

Other Fleets Here tile
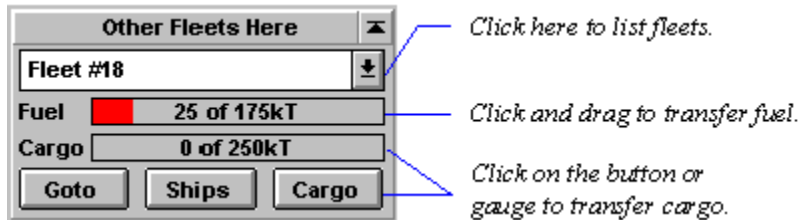
The dropdown lists all other fleets and any mass packets or other objects present at the selected fleet's location.

⇒ To switch to another fleet, choose a fleet in the list, then click on **Goto**.

⇒ To open a dialog to transfer ships between the selected fleet and a fleet shown in the list, select **Ships**. You must own both fleets.

⇒ To transfer fuel between the fleet selected in the Command pane and the fleet listed in this tile, click in the Fuel gauge and drag the cursor.

⇒ To open a dialog for transferring cargo between the fleet selected in the command pane and the fleet listed in this tile, click on the Cargo gauge or the **Cargo** button.

Small Screen Layout
Click on the **Cargo** button to display the cargo list.

Transferring Cargo from Mass Packets
Click on the mass packet in the dropdown, then click on the **Cargo** button and siphon off as much as you can carry.

Fleet Waypoints tile

Current waypoint

This is how the tile looks when the current waypoint is selected. To adjust the speed to the next waypoint, you must first select the next waypoint. The speed control will then appear.
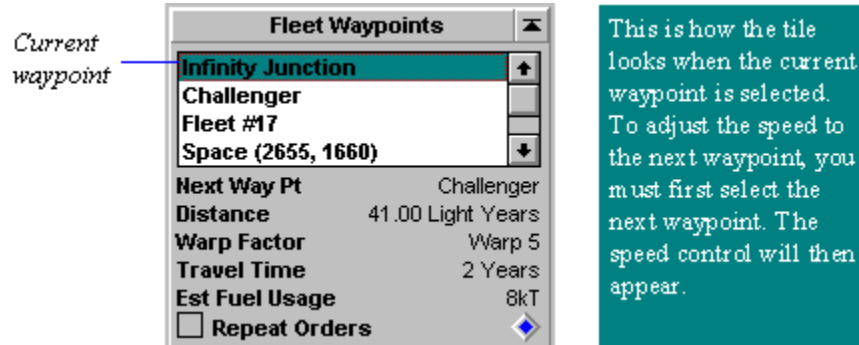
The Fleet Waypoints tile lists all the waypoints assigned the selected fleet. A waypoint may be a planet, another fleet or a position in deep space. The first waypoint listed is your current location. If you are in transit between waypoints, the current waypoint is shown as your coordinates in deep space. Listed below the current waypoint are future waypoints. You assign waypoints in the Scanner pane.

< Back   Next >   Right-click on the blue diamond to display a list of all items at the selected waypoint. Select an item to change the waypoint target.

Selecting a waypoint displays the data and speed control for that leg of the journey.

Left-click and drag the bar to change fleet speed for this leg of the journey.

Right click here to select a new waypoint target from a list of other targets at the same location.

Warp Factor

Left-click and drag the colored bar to adjust speed. Changing speed changes travel time and fuel usage. Here you can optimize fuel usage for travel to the selected waypoint, or for the return. Since using fuel lightens the ship's load, you may be able to increase the speed on succeeding turns without using more fuel.

If you wish to use a Stargate, drag the bar all the way to the right end of the gauge. The speed will change to Use Stargate. If a stargate is not present, the travel time will say "Never".

Est Fuel Usage

This tells you how much fuel you'll use to reach the waypoint at your current speed. When you choose a waypoint you can't reach given the current speed and fuel supply, the Estimated Fuel Usage amount turns red.

Repeat Orders

Repeats the total set of orders you assigned using the Waypoints Task tile, until you deselect this box. Repeating orders is useful if the first waypoint in the list is the same as the last waypoint.

Waypoint Task tile

When you select a waypoint in the Fleet Waypoints tile...
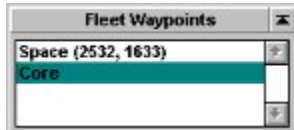
the Waypoint Task tile shows the task you ordered the fleet to perform at that waypoint.
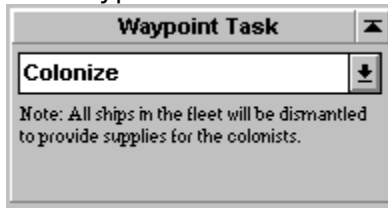
You may alter the task at any time before the fleet reaches the waypoint. Just select the fleet, select the waypoint in the Fleet Waypoint tile, and choose another waypoint task.

The tile shows when the selected fleet is at a location where no waypoint tasks are assigned.
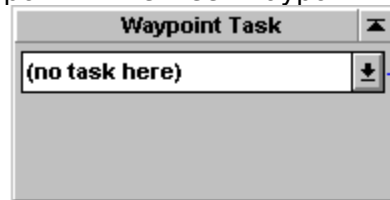
Click here to choose a waypoint task.

The dropdown lists all the waypoint tasks.

For all waypoint tasks except *Attack and Patrol*
If the fleet comes under attack it will defend itself using the Auto Defense battle plan.

Click here to learn about a task:

Transport
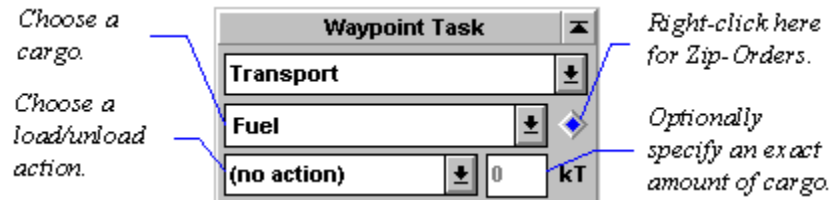
For each type of cargo specify one method for loading or unloading. For some actions you can specify the exact amount of cargo to load or unload.

When you assign an action to a cargo, the cargo name turns from black to green. This tells you, at-a-glance, which cargo has an action assigned.

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 custom Zip Order or modify the existing order in the Waypoint Tasks tile.

(no action)

No task at this waypoint.

Load All Available

Loads as much of the specified cargo as is available on the planet and fits in the available cargo space of the fleet.

Load Half Available

Loads either half of the available cargo of the specified type or fills the cargo space of the fleet whichever is smaller.

Load Up to...

Loads up to the specified amount of the specified cargo. Does not keep the fleet from moving on even if less than the required amount is available.

Wait for...

Loads the specified amount of the specified cargo. Will keep the fleet from moving on if less than the required amount is available.

Unload All

Unloads all of the cargo of the specified type currently on board.

Unload Half

Unloads half of the cargo of the specified type currently on board.

Unload exactly...

Unloads the specified amount.

Load Optimal

Fuel only. Loads or unloads as much fuel as is required such that the remainder is just sufficient to get to the next destination.

Set Amount to...

Loads or unloads as much of the specified cargo as necessary such that the amount on board is the amount specified. Will keep the fleet from moving on if less than the required amount is available.

Load from Fleet

Loads all available cargo of the specified type from the target fleet. If the waypoint is set to a planet then cargo is pulled from all other fleets in orbit. Does not wait for a full load.

Wait from Fleet...

Same as Load from Fleet but keeps the fleet from moving on until it has a full load.

Learn more about:

[Transporting Freight](#)

Attack

Waypoint Task	
Attack	▼
Bloody Saber	▼ —— *Select the battle plan.*
Enemies	▼ —— *Select the opponent.*

Attack an opponent's planet and/or fleet. Select your plan of attack and who you will attack. The example shown here orders the fleet to attack anyone designated as an enemy, using the Bloody Saber battle plan.

Auto Defense is the default battle plan for fleets with non-attack orders. These fleets will automatically use this plan if attacked by an enemy. When you select **Attack** in the Waypoint Tasks tile, Stars! automatically assigns the first battle plan listed after Auto Defense. Click in the battle planet dropdown to assign a new plan.

To learn what each Battle Plan contains, click in the dropdown and select **Battle Plans...** or use the **Commands** (**Battle Plans...**) menu command. The Battle Plans dialog appears, at your service.

___

Learn more about:

The Basics of Combat

Colonize

Waypoint Task	⊼
Colonize	⬇

Note: All ships in the fleet will be dismantled to provide supplies for the colonists.
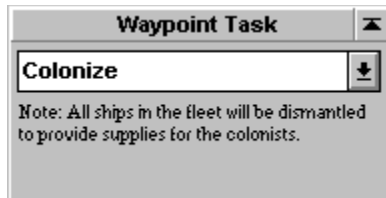
Specify this order when you first colonize a planet. To succeed, the fleet must contain a ship with a colonization module, and must be loaded with colonists. When the waypoint is reached all ships in the fleet are dismantled for raw materials used in building the colony. Once the colony is established you can use freighters to transport additional colonists.

Learn more about:

[Colonization](#)

Remote Mining

< Back   Next >

Specify this order to send a fleet containing robot miners on its way to mine an uninhabited planet. If you try to assign this task to a fleet that doesn't include robot miners, the tile will display this warning:

Waypoint Task	⊼
Remote Mining	±

Warning: This fleet contains no ships with remote mining modules on them. This mission will be unsuccessful.
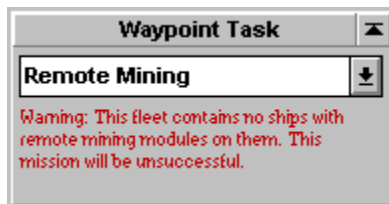
Learn more about:

Remote Mining

Merge with Fleet

This task orders the fleet to automatically merge with another fleet at the specified waypoint.   The fleet will assume the orders of the fleet it's been merged with.

The destination waypoint must be the fleet to merge with. Having a destination waypoint that is merely at the same location of the target fleet is inadequate. You can use the blue diamond in the Fleet Waypoints tile to change which fleet at the destination to merge with.

Scrap Fleet

Waypoint Task	
Scrap Fleet	±

Note: All ships in the fleet will be dismantled.
Some of the minerals can be recovered.

Specify this order to discard an out-of-date ship. Scrapping a fleet salvages a percentage of the minerals used in the ship's construction. This is a good way to get rid of ships built using a hull design that is no longer useful.

The 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, along with all unused Fuel.

◆ **Scrap Fleet at a starbase** -- leaves 80% of the minerals used in construction on the surface of the planet, along with all unused Fuel.

◆ **Scrap Fleet at any planet without a starbase** -- leaves 30% of the minerals used in construction on the surface of the planet, along with all unused Fuel.

◆ **Scrap Fleet in deep space** -- everything is lost.

Lay Mine Fields

Other Waypoint Tasks

Other Fleet-related Tiles

This task lays mines at the specified waypoint. The size of the field is determined by the number of years the fleet performs the task.

Give this order only to fleets with mine laying capability. The tile notes how many mines the fleet will lay for each year it performs the task. The fleet will lay mines only if it has been at the waypoint all year and hasn't moved.

You can view the location and size of a field using the Scanner pane's Mine Field's overlay.

Learn more about:

How to Lay Mines

All About Minefields

Sweep for Mines

Any fleet that has beam weapons can sweep minefields. The tile notes how many mines the fleet will sweep for each year it performs the task. The fleet will lay mines only if it has been at the waypoint all year and hasn't moved.

You can view the location and size of a field using the Scanner pane's Mine Field's overlay.

Learn more about:

How to Sweep Minefields
All About Minefields

Patrol

Waypoint Task		
Patrol	▾	— Select Patrol as the task.
Bloody Saber	▾	— Select a Battle Plan.
Within 50 l.y.	▾	Select the range at which you'll intercept enemy fleets.

Patrol tells a fleet to automatically target incoming enemy fleets and intercept them. The range you specify indicates how close another player's fleet must be before the patrol fleet will consider intercepting it.

Learn more about:

Selecting an Object to Command

The Command pane contains tiles that display planet orders or tiles that showfleet orders. It all depends on the object you've selected to command. Here's how to command a fleet or planet.

Selecting a Planet from the Command Pane

Click on Goto ——— Garfunkel Goto Xfer

Whenever the Location tile shows that you're orbiting a planet, you can command the planet by clicking on **Goto**.

Selecting a Fleet from the Command Pane

Choose a fleet from this list. ——— Fleets in Orbit | Fleet #2 | Fuel 50 of 100kT | Cargo 0 of 25kT

Click on Goto to command the fleet. ——— Goto Cargo
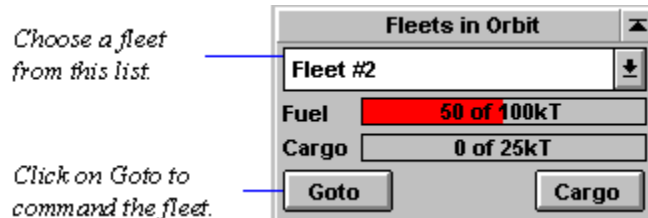
From the Command pane, you can select one of your fleets in the same location using the Fleets in Orbit tile. In the picture, clicking on **Goto** would bring Fleet #2 into the Command pane.

Selecting a Fleet or Planet from the Scanner Pane

Double-click, or click a second time, in the Scanner on your fleet or planet. The object is displayed in the Command pane and magnified in the Scanner. To command an object when more than one object is in the same location, do one of the following:

⇒   Left-click on the location. The selection arrow moves to that location. Now right-click on the same location. A popup appears, listing all objects at that location. Click on the name of the object you wish to command.

⇒   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, enemy fleets are skipped. Even though you'd like to, you can't display enemy fleets in a command pane. Enemy fleets, if present, are listed in the popup menu: selecting one will display what you know about that fleet in the Selection Summary pane.

Obtaining a Planet or Fleet Summary

[Fleet-related Tiles](#)
[Planet-related Tiles](#)
[The Stars! 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.

Messages pane

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 indicated in the message.

You can also view messages from other players and compose and send messages to other players.
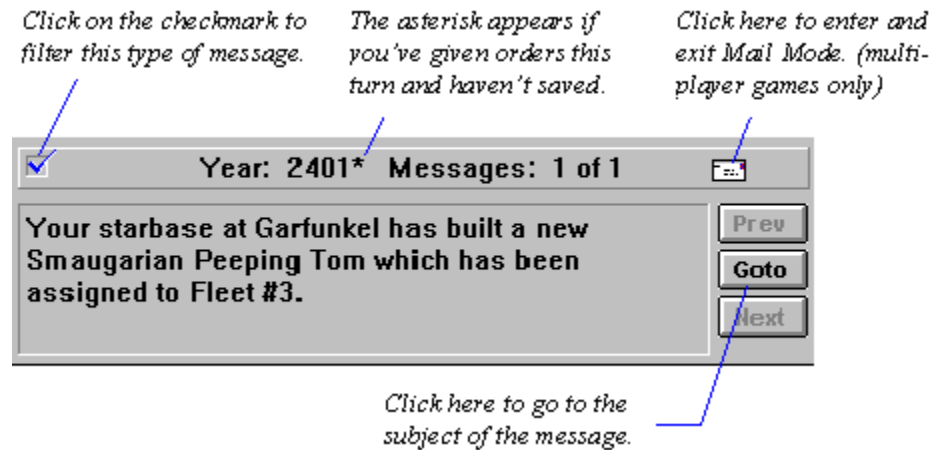
The text in the title bar tells you three things:

◆ 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

Click on the **Goto** button 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**.

Sending Messages to other Players
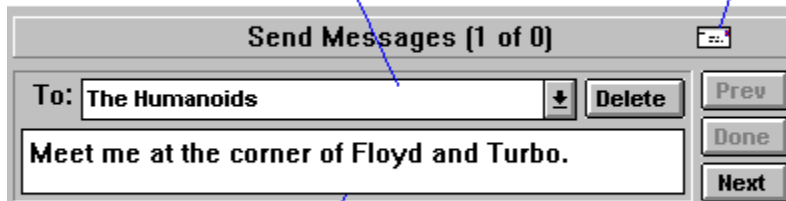
Multi-player Games Only

The envelope appears only if you are playing against other humans. Selecting the envelope replaces the message viewer with a mail form.

Select the addressee from the dropdown list.

Click here to enter and exit mail mode. (multi-player games only)

Send Messages (1 of 0)

To: The Humanoids   Delete   Prev

Meet me at the corner of Floyd and Turbo.   Done   Next

Type your message here. It is sent when you exit Mail Mode.

Your pen pal will receive your message in their next turn. You can use this system to set up diplomatic relations, taunt your enemies, whatever you wish.

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 checkmark changes to a red **X**.

Filtering Message Types
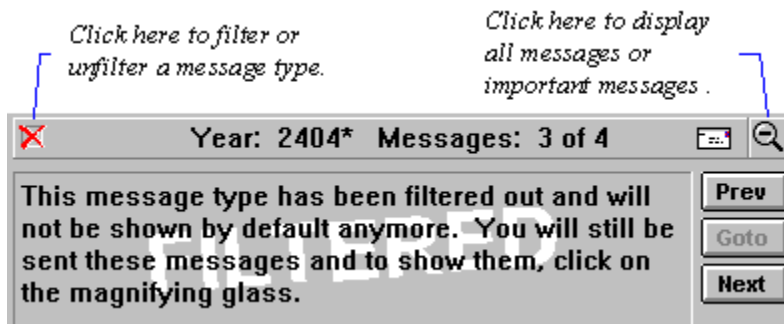
Over time you will find that some types of messages are too trivial to provide you with useful information.   The example shows what happens when you filter out a message.

⇒   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.

Scanner pane
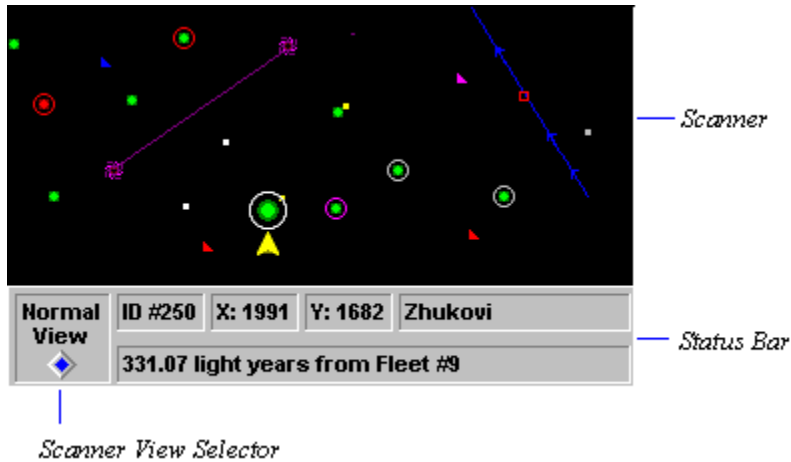
The Scanner pane is your window on the universe, showing what you do and don't know. All the planets in the universe are displayed, along with every other interesting object you know about. When you start the game, all the planets except your home planet are displayed as dim gray specks. Once you visit a 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
Choosing Your View of the Universe
Status Bar Information
Zooming

Key to the Scanner

Planets - Normal View

·	Dim gray - a planet you know nothing about
·	White - a planet you have visited
●	A planet you own
●	An opponent's planet
●	A friend's or neutral's planet

Orbital Devices

●	Starbase capable of building ships
●	Starbase not capable of building ships
●	Mass driver
●	Stargate

Orbiting Fleets

◎	You are in orbit
◎	One or more opponents are in orbit
◎	You and one or more opponents are in orbit

Fleets

▷	Fleet marker
▷	Fleet under command now
◣ ➤	Your fleet
◣ ➤	An opponent's fleet
◣ ➤	You and an opponent have fleets in close proximity. Increase the scanner zoom factor to see the fleets separately (if possible).

Mass Packets and Salvage

▫	Your mass packet
▫	An opponent's mass packet
◇	Salvage

Spacial Anomalies

※	Wormhole

Estimated Paths

	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.

Choosing Your View of the Universe

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.

Left-click on the blue diamond to display a summary of each view.
There are five exclusive scanner views, which you can use with one or more overlays:

Normal view
Planet Value view
Minerals at Planet view
Population View
No Player Information view

These overlays can be used in any combination:

Add Waypoints overlay
Radar overlay
Mine Fields overlay
Fleet overlay
Ship Filter overlay
Planet Names overlay

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.
These overlays can be used in any combination with Normal view:
Add Waypoints overlay

Radar overlay

Mine Fields overlay

Fleet overlay

Ship Filter overlay

Planet Names overlay

Planet Value view
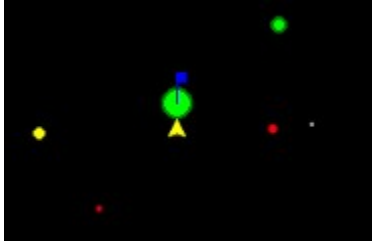
This view represents planet size based on the habitability value. Orbiting ships are not shown in this view. The color specifies the planet type:

◆ **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.

These overlays can be used in any combination with Planet Value view:

Minerals at Planet view
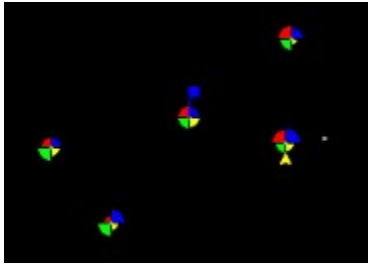
This view shows the relative quantities of each mineral at a planet. Orbiting ships are not shown in this view. The bigger the pie slice, the larger the quantity of that mineral. Each color matches the color of the mineral in the Selection Summary pane:

◆ **Red** -- Fuel

◆ **Blue** -- Ironium

◆ **Green** -- Boranium

◆ **Yellow** -- Germanium

These overlays can be used in any combination with Minerals at Planet view:

Add Waypoints overlay
Radar overlay
Mine Fields overlay
Fleet overlay
Ship Filter overlay
Planet Names overlay

Population view
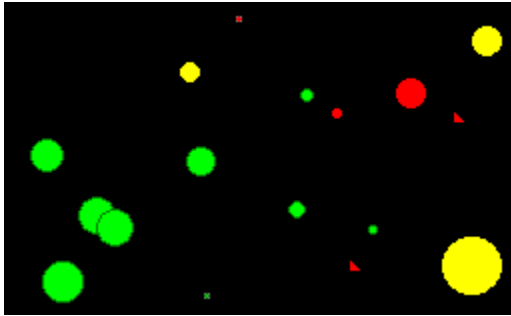
This view displays planets you own in green, planets owned by friends in yellow, and planets owned by neutrals and enemies in red. The bigger the circle, the larger the population.

> **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.

These overlays can be used in any combination with Population view:

Add Waypoints overlay
Radar overlay
Mine Fields overlay
Fleet overlay
Ship Filter overlay
Planet Names overlay

No Player Information view
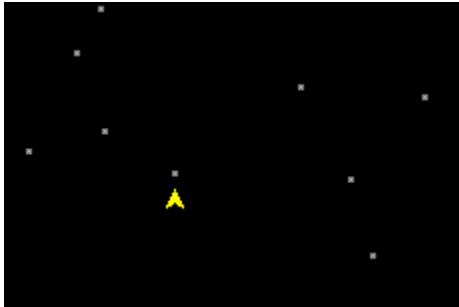
This view hides all traces of planet ownership in the scanner. You can use this view with the Planet Names overlay to plot strategy with another player without revealing your empire. If an opponent will be looking at your screen, make sure you select a planet before you select this view. If a fleet is selected, its waypoint path will be shown.

These overlays can be used in any combination with No Player Information view:

Add Waypoints overlay

Radar overlay

Mine Fields overlay

Fleet overlay

Ship Filter overlay

Planet Names overlay

Add Waypoints overlay

This overlay allows you to use only the mouse to add waypoints for the selected fleet (the fleet displayed in the Command pane).

⇒ To add a waypoint, select the fleet then left-click on the waypoint location.

⇒ To delete a waypoint use the Backspace key. Left-click on the waypoint, then 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 overlay is unnecessary. You can add waypoints in ANY view or overlay by pressing the SHIFT key and left-clicking on locations in the scanner. Add Waypoints view exists as a prompt for beginning players to use the Scanner to <u>add</u> waypoints. (It also allows you to add waypoints without using the keyboard, making it easier to eat and play at the same time.)

Radar overlay

Radar shows the range of detection provided by your planets and fleets. Filled red circles appear around each of your objects that has a normal scanner. Filled dark yellow circles appear around each of your objects that has a planet-penetrating scanner. These scanners can detect fleets in orbit around a planet and provide you planetary stats from a distance.

The radius of each circle is that scanner's detection range.
Planet-based scanners can detect other player's fleets and, if the technology is advanced enough, the environment on planets within range. Likewise, many ship designs allow you to include a scanner. Ship-based scanners detect both fleets and planet environments. The range at which detection will occur depends on the quality and the number of your scanners. Use the Radar menu to scale down the displayed coverage and look for areas of lesser coverage an enemy stealth 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. The menu selection does not change the actual coverage.
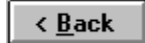
< Back   Next >   To display information on your planet's scanner, left-click on the scanner portion of the Status tile when the planet is displayed in the Command pane. To display information about the scanners used in your fleet's hull designs, open the Ship Design dialog (press F4). To learn more about scanner technology, visit the Planetary and Scanners sections of the Technology Browser (press F2).

Mine Fields overlay
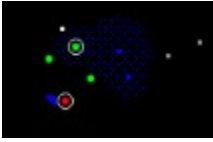
This overlay shows minefields within scanner range. All minefields appear as circular grids. Your mine fields are blue, any friends' mine field's are yellow, and opponent's mine fields are red.

Fleet overlay
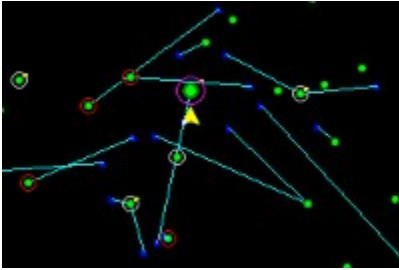
This overlay shows the path of all your fleets at the same time. It's useful for spotting fleets that have no assigned waypoints and planets you own that have no traffic going to them. Also, which fleet may approach closest to a fleet that is stranded, or which fleet may be able to intercept an opponent's fleet or beat an opponent's fleet to colonizing a planet.

Idle Fleets Overlay

This overlay shows only your fleets that have no movement orders. 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.

Ship Filter overlay

This overlay displays those fleets that contain a selected ship design. Select **Ship Filter** to display a list ofship types. If the selected ship types are all in orbit, only the associated planets will have orbit rings. If the ship is in space, it appears as a blue triangle.

⇒ Select one or more ship types to view only those fleets that include the selected type. When you select a ship, the popup disappears. To select an additional or a different ship, click on Ship Filter again and choose a ship type.

⇒ To see all fleets again, select **No Filtering**. This option appears only when ship filters are selected.

⇒ To revert back to the last filter selections, select **Last Filter**. This appears only when no ship filters are selected.

⇒ To filter using all ships currently not selected, select **Invert Filter**.

Planet Names overlay

This picture shows the No Player Information view used with the Planet Names overlay. This overlay displays planet names (at zoom >= 100%). 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.

Status Bar

| 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 between the object you've selected in the scanner and the object you are commanding (the object in the Command pane). If they are the same, the bar is blank.

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

To zoom in or out of the Scanner, use the **View** (**Zoom**) menu command.

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 ship 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 (Large** | **Medium** | **Small**)).

Selection Summary pane

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 summaries:

Planet Summary
Fleet Summary

Planet Summary

To learn more about each part of the Summary pane when a planet is displayed, click on the picture.
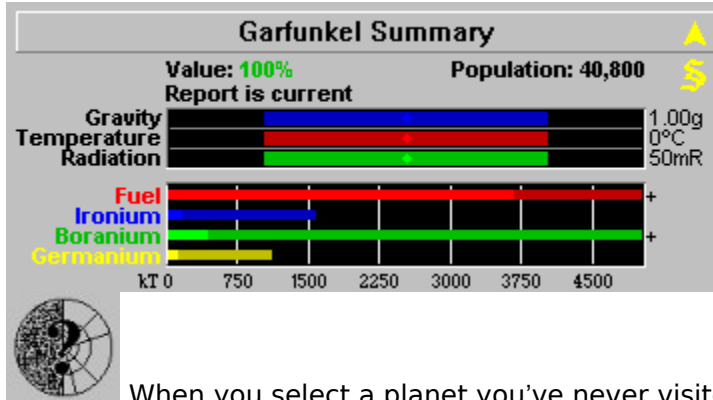
 When you select a planet you've never visited, this symbol is all that appears in the Selection Summary.

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 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

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

Uninhabited -- The planet is free for colonization or remote mining. The Selection 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.)

If the planet is owned by an opponent, left-clicking on the population also displays a guess on the defensive capability of the planet.

Habitability Value

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. Notice how this number compares with the contents of the Environment Graph.

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.

< **Back**	**Next** >

Left-click on the Value for a description of how the value relates to your potential for growth on the selected planet.

Starbase Indicator

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.

Environment Graph

Gravity		1.00g
Temperature		0°C
Radiation		50mR
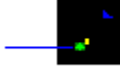
The Environment Graph displays the planet's gravity, temperature, and radiation levels. Left clicking on each of these factors displays an informative summary popup. The name is shown to the left of the graph, its value is shown to the right. The blue, red, and green bars represent the range your colonists 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. You can move these diamonds closer to the center of each bar by terraforming. 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 technology.

Mineral Content Graph
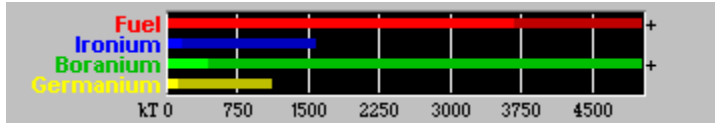
This graph displays the quantity of each mineral on the planet. The bright color shows the amount on the surface and ready for immediate use, the dark color shows the amount under the surface waiting to be mined. Scanners only detect the amount under the surface. You can't detect what's on the planet surface unless you colonize the planet.

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.
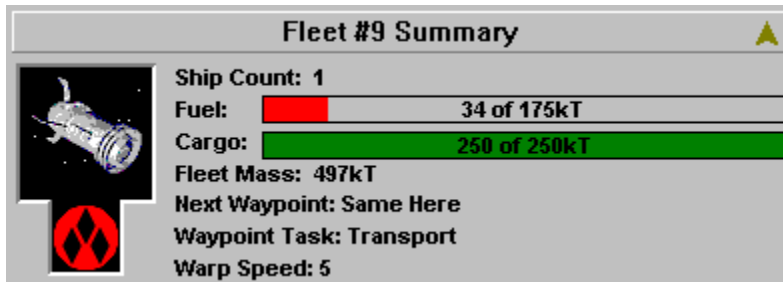
Left-clicking on any mineral to display the exact amount of the mineral under the surface and on the surface, the rate at which the mineral is being mined, and the amount that will be mined in the coming year.

Fleet Summary

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:

Fleet #9 Summary	
Ship Count: 1	
Fuel:	34 of 175kT
Cargo:	250 of 250kT
Fleet Mass: 497kT	
Next Waypoint: Same Here	
Waypoint Task: Transport	
Warp Speed: 5	
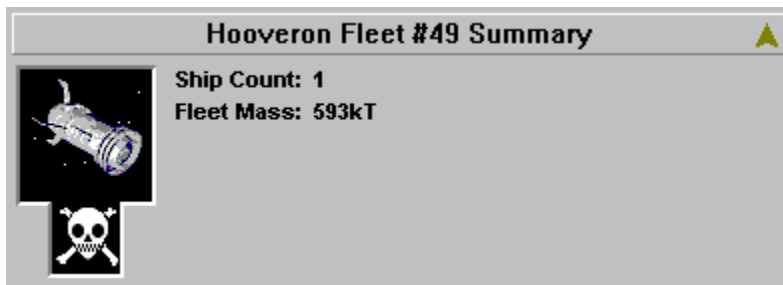
For an opponent's fleet, the owner, number, ship count and mass are displayed:

Hooveron Fleet #49 Summary	
Ship Count: 1	
Fleet Mass: 593kT	

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 diplayed.

< Back **Next >**   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.
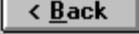
▲ **Multiple objects indicator**
When this arrow is bright yellow, you have information about more than one of the objects at the selected location. Left-click on this arrow to display each object in turn or right-click and choose from a list of the objects here.

Getting Help Fast

Whenever the cursor changes to ⓀＩ , left-clicking displays details on that item.

Blue diamonds ［ < Back ］ ［ Next > ］ offer popup menus of related commands. Left-click on a diamond to display a summary of these commands. Right click on the diamond to list the commands.

Planets

Planets have three environmental factors that affect your population's growth rate: gravity, temperature, and radiation. The levels of gravity, temperature and radiation are different on each planet. You can that is immune to one or more of these environmental factors--a very expensive race advantage. You can also make a planet's environment more hospitable to your race by terraforming.

Planets provide four raw minerals: Fuel, Ironium, Boranium, and Germanium. Fuel is for your starships. The other three minerals provide the building blocks for all the technology you create, including planetary installations such as defenses and scanners, and starbases that can support stargates and mass drivers.

Read more about Planets:

Inhabited Planets

Population

Minerals

Mines

Factories

Building Defenses

Planet-based Scanners

Orbital Devices

Terraforming

Your Home World and Other Inhabited Planets

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, no planet-based defenses, 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 items as your resources and knowledge of technology allows.

All planets contain minerals at the start of the game. All home worlds start with the same 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 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.

Population

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, choose 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 1,000,000people. 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.

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 its current condition. 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.

A planet's maximum population number is also affected by racial traits. Races with the Hyper-Expansion primary racial trait are limited to 1/2 the population which would apply for other races -- a 100% planet would be limited to 500,000 people. Races which have the Only Basic Remote Mining lesser racial 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 50% planet.

Minerals

All planets contain four raw minerals: fuel, ironium, boranium and germanium. Fuel is the energy source for most types of starships. The other three minerals provide the building blocks for almost everything your race produces. All four minerals exist 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 total mineral supply for the selected planet. 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 under the surface. If you are scanning the planet but don't own it, you'll see only what's under the surface. You see the total minerals above and below the surface for any planet you've colonized.

Left-click on any of the bars to display the exact quantity and density 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

Mines extract minerals from the planet. 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 unmined quantity.

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.

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

Learn more about:

Mining

Auto-building Mines

Factories

Factories, along with people, create resources for building 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.

> **Tip**: Keep an eye on how many factories you build. They increase the rate at which you use available minerals and, if left unchecked, can strip a planet. If you think you've built too many, you can always raze a few.

Learn about:

Building Defenses

Defenses partially protect a planet from bombs and invasion. If you haven't taken the primary racial trait, War Monger, 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.

Defense installations can partially protect a planet from bombs and invading troops. You should always build defenses in a single player game. AIs love to bomb planets. 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. Use the Production dialog to perform either of these tasks:

◆ **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** replaces your existing defenses with defenses that employ the next level of defense technology you've researched. The Upgrade Defenses task appears in the production dialog only if the next level of technology is available. Each Upgrade Defenses task upgrades all your defenses. For example, if you currently employ Missile Batteries and the Production dialog shows you that the Upgrade Defenses task is available, then adding one Upgrade Defenses task will upgrade your defenses to Laser Battery. Notice that when you upgrade defenses, the percentage of coverage also increases.

It's a good idea to first upgrade your defenses to the level of technology available to you, then build new defenses. You probably won't need to spend too many resources on defenses early in the game, unless you meet a race that reproduces faster than you do and uses a strategy of dropping colonists on your planets in an attempt to take them over.

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.

Planet-based Scanners

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.

You can only build scanners that are more powerful than the scanner currently in use. When you successfully build a new scanner, any weaker scanners you also know how to build disappear from your inventory. The new scanner replaces the existing 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.

Learn more about:

Scanning the Universe

Orbital Devices

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.

Read about Orbital Devices:

Starbases

Stargates

Mass Drivers

Starbases

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 or evade 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 hide the planet it orbits from remote scanners.

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

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 have access to extra starbase hulls if you have the Improved Starbases trait.

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.

Starbase Design

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

◆   Orbital Fort -- No ship building capacity.

◆   Space Dock -- Ship building capacity: 200kT or smaller ships. This hull requires the Improved Starbases racial trait.

◆   Space Station -- Unlimited ship building capacity.

◆   Ultra Station   -- Unlimited ship building capacity--more slots for wepons, shields and other components. This hull requires the Improved Starbases secondary racial trait.

Upgrading a Starbase

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. Here's how the cost is determined:

If the hull changes:

◆   You receive the recycle value for the old station.

◆   The new station costs the full amount.

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.

Stargates

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

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.

Learn about:

Navigating Using Stargates
Designing Hulls

Mass Driver Basics

Mass drivers provide a fuel-free method of transporting mineral cargo packets between planets, and, secondarily, can act as an effective long range weapon. Mass packets are bundles of Ironium, Germanium and Boranium. Mass drivers fling mass packets at high rates of acceleration so you can't fling 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

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

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 racial trait, decay rates are half the stated level. Packets do not decay in the year they are launched or in the year they arrive at a planet.

Building Packets

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 shows only mass packets within your scanner ranges, regardless of who the packets belong to (unless you have the Packet Physics primary trait).

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.

Don't Attack Packets

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

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.

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.

Learn about:

Flinging Mass Packets

The Guts of Mass Drivers

Terraforming

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 learn 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:

Won't be a candidate until you significantly improve terraforming technology.

Great candidate for terraforming.
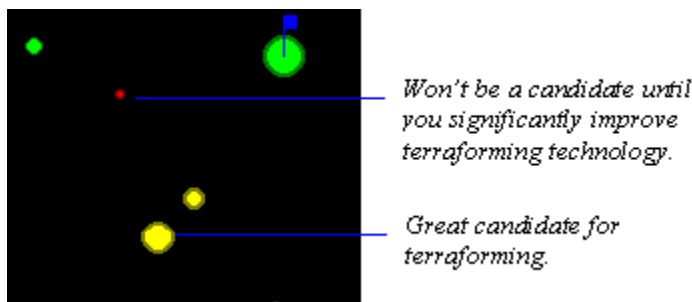
Click on a planet in the Scanner pane, then look in the Selection Summary pane. The environment graph shows how much you can modify the planet's environment, given your level of terraforming technology. The following graph shows that the player possesses Gravity, Temperature and Radiation terraforming 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.

Fortunately you don't have to worry about order in which to terraform the different environmental factors. The terraforming task that appears in the production dialog always works on the factor which will have the greatest effect on the planet's value. If you can improve Gravity by 3%, Temperature by 5% and Radiation by 2% the Production dialog will let you add up 10% Terraforming to the queue. Each 1% Terraforming task executed will improve one of the environmental factors by 1%.

Habitable range

Grav	3.20g
Temp	-64°C
Rad	15mR

Maximum terraformed level, using current technology

Current radiation level

Read more about Terraforming:

How to Terraform

You can terraform by adding terraform tasks manually to the production queue or by setting default orders to terraform upon colonization. The latter method is limited to terraforming only until all environmental factors are brought into the habitable range. You can manually terraform past this point, if your technology allows. You can also set a default order that instructs idle planets to automatically add possible terraform tasks to the Production queue.

To manually terraform any or all the environmental factors, Temperature, Radiation and Gravity:

1. Double click on the planet you wish to terraform.

2. Click on the **Change** button in the Production tile, opening the Production dialog.

3. In the production inventory, click on Terraform Environment. Then single click (add one), SHIFT-click (add up to 10) or CTRL-click (add up to 100) on the **Add** button. The Terraform Environment task appears in the production queue.

For each Terraform Environment task you add to the production queue an environment factor is improved by 1%. The maximum number of tasks is limited by the terraforming percentage allowed by your current technology. Terraform Environment terraforms using only the technology you're researched. So, if you know Radiation and Temperature Terraforming, but not Gravity Terraforming, Terraform Environment can modify only radiation and temperature levels. It will always first terraform the environmental attribute that most improves the planet's habitability.

Terraforming as a Default Action

More about Terraforming

General Planet Topics

It's useful to assign permanent, default orders to automatically terraform any planet with a negative value during the same turn that the colonists land. This prevents you from accidentally losing colonists if you foget to add Terraform Environment to new colony's Production queue. To create the default order:

1. Run **Commands** (**Defaults**). The Defaults dialog appears.

2. Choose the **Terraform planets with negative values** option and **OK** the dialog.

That's it. The default order will take affect with the next colonization mission to a negative planet (terraforming is something like an attitude adjustment).   It does not affect any planets where colonists have already landed.

When terraforming is chosen as a default, the Terraform Environment task is added automatically to the production queue for that planet. The planet will be terraformed only for those environmental attributes that have a negative value and that you have the technology to change. Terraforming will continue only until the negative values reach zero. To go beyond the point of minimal terraforming, you must manually add terraforming to the production queue.

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

If you just colonized a negative planet and haven't set the default terraforming order for new colonies, immediately add Terraform Environment to the production queue to avoid losing colonists on the next turn.

You can also cause planets with nothing in their production queues to perform terraforming operations whenever possible. Just select the Auto Terraform Idle Planets option in the Defaults dialog. Items in the production queue have highest priority, followed by the auto-build orders, then Auto Terraform.

Types of Terraforming Technology

There's a type of terraforming technology for each of a planet's environmental factors: Temperature Terraforming, Gravity Terraforming, and Radiation Terraforming. There are four paths of research to achieve these technologies:

◆ The Total Terraforming lesser racial trait requires that you research only Biotechnology to learn terraforming technology.

Otherwise the following apply:

◆ 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 minimum level of each technology allows you to improve a specific factor 3% from its initial value; the maximum improvement (without Total Terraforming) is 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 requirements and types of terraforming technology, open the Technology Browser (Press F2) and select Terraforming from the dropdown menu.

Total Terraforming

Total Terraforming is a lesser racial 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.

If you have this advantage, you begin the game with the ability to improve the temperature, gravity and radiation levels up to 3%. Terraforming will require 30% less resources per percentage point modified. You'll be able to research terraforming technologies that improve factors up to 30%. The maximum level of terraforming possible without this benefit is 15%. Total Terraforming requires research only into Biotechnology, while all other terraforming technology requires knowledge of Biotechnology and one other technology (the latter depending on the type of terraforming).

Production

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.

Read more about Production:

How Production Works
Adding an Item to the Queue
Removing an Item from the Queue
Clearing the Production Queue
Unblocking a Queue
Using Auto Build
Production Strategies
Conditions that Affect Production

How Production Works

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

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

Upgrades of existing items, such as defense installations, planet-based scanners, and ship and starbase hulls, will replace any older versions in the inventory list. When you upgrade a hull, 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

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
To add **10 units** of an item at a time, hold down the SHIFT key while double-clicking on the item in the inventory list, or click on the item, then SHIFT-click on **Add**.

To add **100 units** of an item at a time, hold down the CTRL key while double-clicking on the item in the inventory list, or click on the item, then CTRL-click on **Add**.

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
To add **10 units** of an item at a time, hold down the SHIFT key while double-clicking on the item in the inventory list, or click on the item, then SHIFT-click on **Add**.

To add **100 units** of an item at a time, hold down the CTRL key while double-clicking on the item in the inventory list, or click on the item, then CTRL-click on **Add**.

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
To add **10 units** of an item at a time, hold down the SHIFT key while double-clicking on the item in the inventory list, or click on the item, then SHIFT-click on **Add**.

To add **100 units** of an item at a time, hold down the CTRL key while double-clicking on the item in the inventory list, or click on the item, then CTRL-click on **Add**.

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

⇒ 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
To remove **10 units** of an item at a time, hold down the SHIFT key while double-clicking on the item in the queue, or click on the item, then SHIFT-click on **Remove**.

To remove **100 units** of an item at a time, hold down the CTRL key while double-clicking on the item in the queue, or click on the item, then SHIFT-click on **Remove**.

Clearing the Production Queue

More about Production

[Clear]

Click on the **Clear** button to remove all items from the production queue. The twin to this button can be found on 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

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, if your race has the ability, use mineral alchemy (or use a combination of the two).

To transport minerals, just 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.

> If your race doesn't have mineral alchemy, skip the rest of this. To learn whether or not you can perform mineral alchemy, choose the **View** (**Race**) menu item, then turn to page 3 of the View Race dialog.

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 a few mineral alchemy units in the queue ahead of the item you're trying to build. Each unit of mineral alchemy will turn a mere 25 of your resources 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.

On planets with low mineral densities you may find it useful to periodically insert mineral alchemy into your production queue, to make sure you always have enough minerals to create the items you need.

Using Auto Build

Whatever you select to auto-build is automatically added to the production queue only when the queue is empty. If there is an item in the queue that can't be built (listed in red), the queue will never be empty and auto-build won't go to work. In that case, you'll need to mine more minerals, create minerals using Mineral Alchemy, or transport minerals to your planet from another planet you own or are mining. Unless you've invested quite a few resources in partially producing the item blocking the queue, you might also consider removing it until you have sufficient resources.

Auto-Build Strategies

Your rationale for choosing an auto-build strategy depends on several things. If you're mineral-poor, you'll want to auto-build mines first until you have enough minerals on the surface to start serious productions, then auto-build factories. The auto-build command has a **Mines, then Factories** option that builds all the mines you can use, then builds all the factories you can use, then adds mines to the queue, and so on.

If you have enough minerals on the surface to begin serious production, consider auto-building factories first. Factories increase your production rate by producing more resources. This is especially important if your race is slow to reproduce and thus slow to create resources.

> **Tip**: Keep an eye on how many factories you build. They increase the rate at which you use available minerals and, if left unchecked, can strip a planet. If you think you've built too many, you can always raze a few.

Production Strategies

Here's a few tried and true strategies for production. Don't be afraid to try others. Use these if you aren't sure what else to do, or if these seem like a good match for your method of play.

Starting Out on New Planets

When you first colonize a planet, it's a good idea to auto build either factories or mines. While factories cost resources and minerals to build they also produce resources. Mines create the raw materials used to build everything. The more factories you have, the faster you can produce things. The more mines you have, the faster you can bring raw materials to existing factories. The number of factories and mines you can build is limited to the resources you devote to production. The number you can operate is limited by the size of your population.

> Some races operate factories or mines more efficiently than others. To learn your race's efficiency, choose the **View** (**Race**) menu item, then turn to page 5 of the View Race dialog. The values for the number of factories or mines 10,000 colonists can operate ranges from 5 to 25. The higher the number the more efficient the race.

When you start the game, use the Auto-build default in the Defaults dialog. That will cause the item you choose to auto-build to be automatically built on all planets you colonize, until you change the default.

Don't Build More than You Can Use

Although you can build more mines, factories and defenses on a planet than you can use (to the limit of your resources and minerals) the number you can actually operate is based on the size of your population. The Status tile for each planet shows how many of each facility the population can operate for a given turn. Generally, if you build more than you can operate, you're wasting resources in production that you could put to use elsewhere.

> To learn how many mines and factories every 10,000 colonists can operate, choose the **View** (**Race**) menu item, and go to page 5 of the View Race dialog.

Razing Installations

In the production inventory you will see Raze Mine, Raze Factory, and Raze Defenses. Adding a raze task to the queue destroys the associated installation: one Raze Mine task destroys one mine, returning no minerals. Razing a factory destroys one factory and returns one kT of each mineral. Razing a defense destroys one defense and returns three kT of each mineral. Razing a mine returns nothing.

You'll probably only want to use this feature if you are desperate for minerals or know the enemy is coming with an overwhelming force and you don't want to leave anything for them before you give up the planet. Otherwise, if you're defeated, the enemy will get any of your mines and factories not destroyed by the attack.

Conditions that Affect Production

Racial 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 eight 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

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 5% cheaper when you attain level 4 Propulsion and level 2 Energy, 20% cheaper with level 7 Propulsion, level 5 Energy, and so on. You can eventually reduce the cost of producing some items by 90%.

Disaster Strikes Planet X!

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

You can't go from rubber band drives to ramscoops or from binoculars to 400x 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.

Read more about Research:

Fields of Study

Allocating Resources for Research

The Cost of Research

Research Strategies

Fields of Study

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 suma 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 90%.

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.

Allocating Resources for Research

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 if 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

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 racial traits. The Research dialog shows you only the technology that's available to your race.

Research Strategies

Early in the game, when resources are scarce, it's a good idea to research only the technology you need to build a specific item or perform a specific task. Create clear goals and research along the technology paths needed to meet those goals. Ultimately, you'll spend the same on research regardless of the order. However, you'll spend more if you study things you don't currently need while you're trying to research technologies you do need.

You can use the Next Field of Study dropdown in the Research dialog to help sequence the fields you wish to study.

Designing Ships

Use the Ship Designer dialog to create, edit and delete new ship designs. After you create a new design you can add it to the production queue of any of your planets that has a starbase with a space dock. There are limits to the number of designs and ships you can have in the game. Develop strategies that take these limits into account.

Read more about Designing Ships:

How to Approach Ship Design
Designing a New Ship from Scratch
Editing an Existing Ship Design
Deleting a Ship Design
Reaching the Maximum Number of Designs
Counting the Number of Ship Designs
Adding Ship-based Scanners
Adding Cloaking Devices
Engines
Learning About Enemy Hulls

How to Approach Ship Design

[More about Ship 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 Ship from Scratch](#)

[Editing an Existing Ship Design](#)

Designing a New Ship from Scratch

To design a new ship from an empty hull schematic:

1. Select **Available Hull Types**.

2. Click on the hulls dropdown and select a hull design:
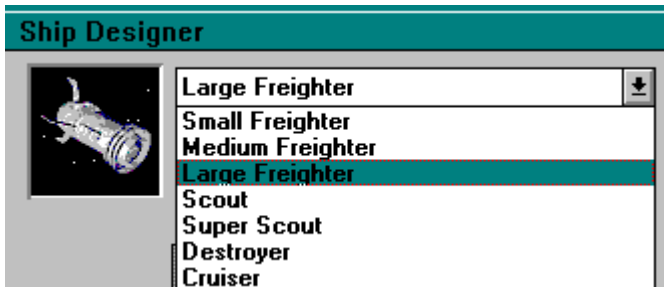
3. Click on **Copy Selected Design**.

 If the **Copy Selected Design** button is shadowed, there are 16 existing designs. 16 is the maximum number of designs you can have at one time. You must delete one existing design before you can design a new ship.

4. Attach components to the hull by dragging them from the ship component list over to a compatible tile on the ship schematic. Hold down the SHIFT key while dragging as many items as the slot can hold.
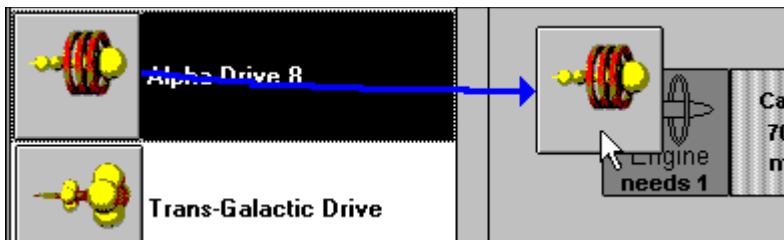
5. Use the spinner controls below the ship picture to choose a representative image for your new design.

6. Click in the name field and type in a name for the new ship design.
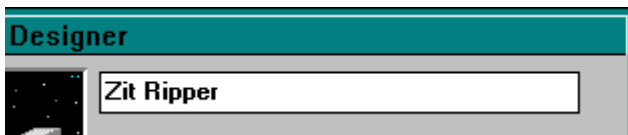
7. **OK** the dialog.

Editing an Existing Ship Design

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 and select the design.

	Smaugarian Peeping Tom	▾
	Lilipution Freighter	
	Smaugarian Peeping Tom	
	Small Colonizer	

3. Click on **Copy Selected Design**.

    [< Back] [Next >] If the Copy Selected Design button is shadowed, there are 16 existing designs. 16 is the maximum number of designs you can have at one time. You must delete an existing design before you can design a new ship.
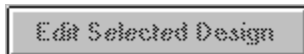
    [Edit Selected Design] If the Edit Selected Design button is shadowed, there are existing ships based on this design. Only designs for which no ships exist may be edited.

4. Drag the components to be removed from the ship schematic to the ship component list and release. Hold down the shift key to drag all components from the slot at once.

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

    [< Back] [Next >]

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

7. 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 in the upper-right corner and type in a new name. Then click on **OK**.
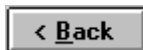
    [< Back] [Next >]

Deleting an Existing Ship Design

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.

This 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.

0 of 19
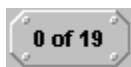
In this case, all of the 19 ships built on this design have already been destroyed. Deleting this design will destroy no existing ships.

34 of 36
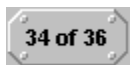
In this case, 34 out of the 36 ships built on this design remain intact. Deleting this design will destroy all 34 remaining ships.

To delete an existing design:

1. Select **Existing Ship Designs**.

2. Click on the ships dropdown and select the design to delete.

    < Back   **Next >**

3. Click on Delete Existing Design.

Reaching the Maximum Number of Designs

More about Ship 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 Ship Designs

More about Ship 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**.

3. Click on the dropdown next to the ship picture and count the number of designs.
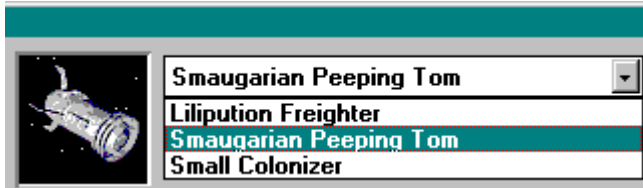
To learn how many ships of a single design are in play:

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 Filter in the Scanner pane.

Adding Ship-based Scanners

To detect 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

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

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

Multiple scanners on a single ship are cumulative. Fleets are still limited to the range of the best scanner in the fleet, but a particular ship's scanner range is a modified sum of the ranges of its scanners. The range of the best scanner establishes the base range. Each additional same or lesser scanner adds 20% of its rated scanning range to the base range. Let's say you have a ship design with two 100 light year scanners and one 60 light year scanner. One of the 100 light year scanners sets the base range. 20% of the second 100 light year scanner and 20% of the 60 light scanner are added to the base, giving a total range of 132 light years (100 + 20 + 12). The same calculation applies to planet penetrating scanners.

Strategies for Scanner Use

Early in the game, it's a good idea to place a scanner on every ship. Later on, you may not find it necessary to add them to freighter designs or any other type of ship traveling only in territory already covered by your planet-based scanner. You may want to add a fleet-detecting scanner to any ship design that will be used near the fringes of your empire, to watch for intruders on your personal space.

Learn more about:

Adding Cloaking Devices

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.

You can add a cloaking device to any slot labeled **Special** or **Scanner/Special**. To learn how cloaking is calculated for a ship and a fleet, and how to use a cloaking device to your best advantage, read about Cloaking. To learn more about specific cloaks, open the Technology Browser (press F2) and view the Special category.

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

Learn more about:

Engines

There are two basic types of Engines: the standard engine, which requires the Fuel mined from planets; 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

Engines that require Fuel will serve you well in the early stages of the game. If you chose the race trait, 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. While this engine requires Fuel, it's dramatically cheaper to operate than any other standardengine and is the only engine that can produce Warp 10 without damaging the ship.

Standard engines are three times safer than Ramscoop engines when attempting to negotiate enemy minefields.

Ramscoop Engines

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.

Ramscoops are more likely to set off mines than standard engines. Normal and Mass Discriminator mines are three times more likely to go off. Damage from mines is also greater per ship and per fleet. Speed Bump mines are twice as likely to snare a fleet with ramscoop engines.

You won't be able to build ramscoop engines if your race possesses the lesser racial trait, No Ramscoop Engines.

Overthrusters

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 an initiative bonus of +2 that equates to one extra square of movement per round of battle. Each additional Overthruster provides an additional +2 to initiative. Overthrusters are described further in the Special section of the Technology Browser.

Maneuvering Jets

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

Learn more about:

Fleet-to-fleet Combat

Learning About Enemy Hulls

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.

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.

Building and Managing Fleets

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.

Read more about Fleets:

Assembling Fleets
Setting the Fleet's Speed
Finding a Single Fleet
Finding a Specific Fleet Composition
Switching Between Fleets
Naming Fleets
Using Fuel
Rendezvousing Fleets
Transferring Cargo
Jettisoning Cargo
Splitting and Merging Fleets
Scrapping Fleets

Assembling Fleets

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

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 tile, 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 two most important factors are 1) how long it will or should take to reach the waypoint and 2) the amount of fuel the fleet will need. If you specify your speed before loading fuel and cargo you may be in for a surprise. Fuel usage is based on fleet mass. You should load the fleet before you set the speed. If you load the fleet after setting the speed, go back and adjust the speed again. Now you'll get an accurate reading of the time and fuel usage based on your real payload.

Maximum Speed

All engines have an absolute maximum speed and an optimum speed.

The absolute maximum safe speed for all 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 the Interspace-10 engine can travel safely at warp 10.

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 show this speed for each engine. The following graph shows that the best warp speed for this engine is warp 7.
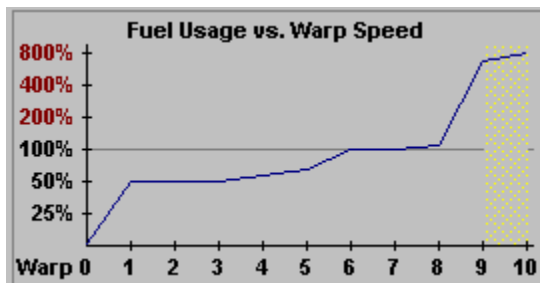
The yellow grid between warp 9 and 10 shows that the ship using that engine has a 10% chance of self-destructing while traveling at warp 10. (The affects of self destruct are the same as those caused by the self-destruct battle tactic.)

Tips for Setting Speed

◆ For flights that are assigned more than one waypoint, you can set the speed for each leg of the journey to optimize for fuel efficiency or time.

◆ If it takes more than two turns to reach a waypoint, try increasing your speed each turn. You may be able to reduce your travel time without using as much fuel as the original estimate. You can do this because as your fleet uses fuel, it decreases its mass and thus needs less fuel to go the same speed.

Finding a Single Fleet

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 (if you've renamed it).

To find another player's fleet

⇒ Enter the fleet identification using this format:

[< Back]   [Next >]

race name   the word "fleet"   #(fleet number).

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 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

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.

⇒ 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

1. Select the fleet you wish to rename, displaying it in the Fleet tile.

2. Click on the **Rename** button in the Fleet tile:
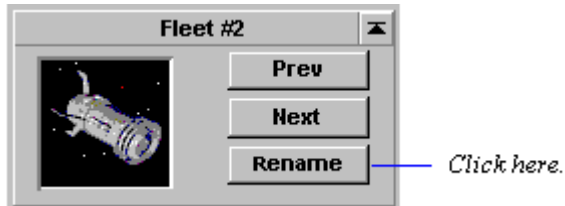
3. Replace the existing text with your own more descriptive label:
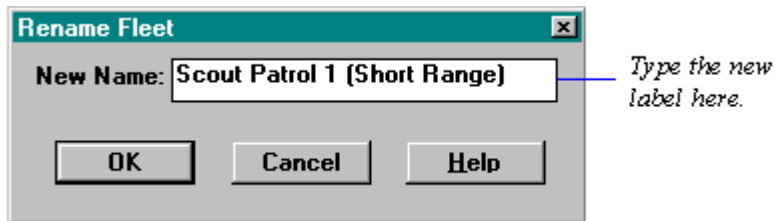
4. **OK** the Rename dialog. The new name appears in the Fleet tile and anywhere else you'd expect the name to be displayed.

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

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 fleet. This mass includes all loaded cargo and fuel. Under some conditions you'll want to load only the optimal amount of fuel to reach a destination, keeping the fleet mass to a minimum. If you're mounting an exploration, colonizing or mining expedition, you'll probably want to top off the tanks.

Fuel usage is also based on the rate at which each ship in the fleet uses fuel. 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.

> **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.

Optimizing Fuel Usage

You may want to use the Load Optimal Fuel transport task for a fleet heading to a planet that has enough fuel to carry the fleet to its next waypoint. This is an efficient strategy if you establish unchanging trade routes for freighters. Stars! will then automatically load (or unload) fuel so the fleet carries only the amount that it needs. Make sure all the waypoints where you've assigned this task continue to have enough fuel available to carry out the orders.

You can also optimize fuel usage by designing ships that generate their own fuel. Ships with Ramscoop engines and the Fuel Transport and Super-Fuel Xport hulls have this capability. The Fuel Transport and especially the Xport hull can carry an immense amount of fuel (and not much else), making them useful as filling stations for the rest of the fleet. Check out the Engines and Hulls sections of the Technology Browser (press F2) for more information.

Fuel and Colonization Missions

For colonizing, it's a good strategy to fill the fuel tanks. When the colony ship arrives, the ship is scrapped, leaving any leftover fuel available as a stockpile for other fleets passing through while the new colony establishes its mines. This is especially true for fuel poor planets.

Fuel and Combat

Ships don't use fuel while in combat.

Fuel and Fleets in Orbit

Fleets orbiting planets do not use or require fuel. If you leave a fleet at one of your planets to defend it from possible attack you don't need to load it with fuel. If you have to send it off to chase an opponent there is no time penalty for loading fuel before leaving.

Fuel and Ramscoop Engines

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 possible speed for that ramscoop. Ramscoops generate fuel when traveling at "free" speeds. 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.

Stargates and Wormholes

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

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.

Est Fuel Warning in the Fleet Waypoints Tile
When you choose a waypoint you can't reach given the current speed and fuel supply, the Estimated Fuel Usage amount turns red.

Rendezvousing Fleets

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

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 ca 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.

Transferring Cargo

You can transfer cargo between fleets or between planets and fleets. If you transfer to an opponent's fleet or planet, you can transfer it back before the turn is generated. Once the turn is generated, you can't get the cargo back. If you transfer something to a human opponent, you should also send a message indicating the transfer was made. This allows you to set up a rudimentary form of Trade.

Transfer cargo using one of the cargo transfer dialogs. These are accessible from several tiles in the Command pane.

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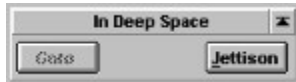
As indicated by the Location tile shown here, you must be in deep space to jettison cargo. Do this if you don't have enough fuel, must reach your destination or make a fast getaway, and can't wait for another ship to reach you with fuel.

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.

Splitting and Merging Fleets

More about Fleets

Playing Stars!

To split a fleet, click on the **Split** or **Split All** button in the Fleet Composition tile. If you choose **Split**, a dialog opens allowing you to split up or merge fleets as you wish. You can also click on the **Ships** button in the Other Fleets Here tile to selectively split or merge fleets.

- The **Split** and **Split All** buttons are disabled when you have 500 fleets.

- The **Split All** button will fail if it would cause you to wind up with more than 500 fleets.

⇒ To merge all fleets at a location, click on the **Merge** button in the Fleet Composition tile. If the resulting fleet would have more than 32,000 ships of a single type the merge won't work.

You can also merge fleets using the Merge with Fleet waypoint task.

If you would like to transfer some but not all ships between two fleets, click on the **Ships** button on the Other Fleets Here tile.

Scrapping Fleets

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.

< Back   Next >

< Back   Next >

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, and any Fuel not used during the journey.

◆ **Scrap Fleet at a starbase** -- leaves 80% of the minerals used in construction on the surface of the planet, and any unused Fuel.

◆ **Scrap Fleet at any planet without a starbase** -- leaves 30% of the minerals used in construction on the surface of the planet along with any unused Fuel.

◆ **Scrap Fleet in deep space** -- all construction minerals are lost.

Navigation

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.

Read more about waypoints:

Adding Fleet Waypoints and Tasks
Moving Fleet Waypoints
Deleting Fleet Waypoints
Example Waypoint Scenarios

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

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.

2. SHIFT-click on the location you want the fleet to travel to. A green line appears between your current location and the new waypoint.
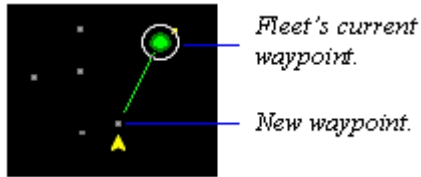
> **Notes**: 1) The route line is drawn in white if two or more legs of the route are identical. 2)You can't add two consecutive waypoints at the same location.

3. Look at the fleet's speed and fuel usage in the Fleet Waypoints tile and adjust if necessary.
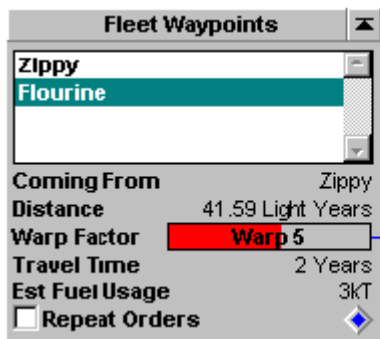
4. Assign an appropriate task from the Waypoint Task tile. If there's no work to be done at that waypoint, choose No Task Here.
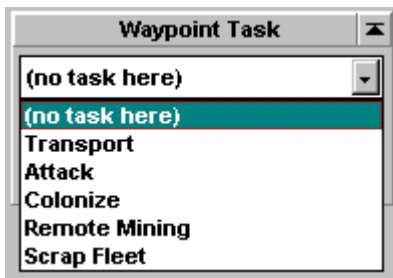
> You can also right-click on the blue diamond in the Waypoint Task tile and choose an pre-defined Zip Order, or create your own custom Zip Order.

5. Repeat steps 2 through 4 to add more waypoints.

6. If the final waypoint is the same as the original starting location you can check **Repeat Orders** in the Waypoint Task tile to cause the fleet to continually repeat the entire series of tasks until the fleet is interrupted.

> **Tip**: 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.

Moving Fleet Waypoints

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

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

You must have a stargate at the source planet and at the destination planet. You can navigate only through your own stargates. Stargates have limitations on the mass they can transfer and the distance they can transfer it.

To send a fleet through a stargate:

1. Select the fleet to take through the gate. Make sure it isn't carrying anything other than Fuel.

2. 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.

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

Range (how far fleets can jump safely)

This is determined by the range of the source stargate.

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

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.

Learn more about:

Stargates

Wormhole Navigation

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 Very Stable to Very Unstable. Very Stable 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.

⇒ 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.

Example Waypoint Scenarios

Repeat Orders Scenario

You could order one of your fleets at your home planet to load colonists and Fuel from its current location, travel to another planet you own, unload the colonists, load as many minerals as you can, load enough Fuel to return to your home planet, unload all the minerals, load more colonists, and repeat those orders until told otherwise (Repeat Orders checkbox).

Exploration Scenario

You'll want to explore planets near you. Build a fleet that has at least one ship with a scanner, load it full of fuel, and assign it waypoints to a string of nearby planets. For each waypoint you select you will see the amount of fuel that leg of the journey will use and how long it will take to get there listed in the Fleet Waypoints tile. It can be a good idea to have fleets on exploration missions travel in a somewhat circular path so that they wind up near a planet you own before they run out of fuel. Otherwise you may have to rescue them later.

Summary of Your Last Visit to the Planet/Waypoint

Each time your fleet stops at a planet you will obtain a mineral and environment summary of that planet. On the next turn when the fleet has moved away (assuming you gave it additional waypoints) you'll notice that the planet's color in the Scanner pane is white instead of gray (in Normal view). When you click on the planet, the Selection Summary pane displays the environment and mineral summary of that planet. This summary, however, is only as recent as your last visit to that planet. You can tell how old the data is by looking at the Report Vintage.

Colonization

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 tou 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.

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

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.

- **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.

Colonizing an Uninhabited Planet

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

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.

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.

Hey, that Planet's Already Inhabited!

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.

Mining

Most of a planet's minerals lay under the surface, unavailable for use until your colonists mine them. You can assign colonists the task of mining their own world, 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.

Read more about Mining:

Mining Colonized Worlds

Remote Mining

Mining Colonized Worlds

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.

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 density 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 still under the surface.

3. Calculate productivity using this formula:

   (potential productivity)(mineral density) = (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 density 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.

Remote Mining

Remote mining is the use of specialized mining ships to remove minerals from uninhabited (and preferably, uninhabitable) 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.

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

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.

Read more about Remote Mining:

Creating a Robot Mining Fleet

Robot miners can't carry much fuel. 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 cicuitous 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.

Strategies for Remote Mining

If an opponent colonizes an uninhabited world you're in the process of remote mining, your mining efforts will stop immediately. You can protect against surprise by designing mining ships with long range scanners or by stationing a fleet of armed ships with attack orders at the same location as the mining fleet.

You can use remote mining to help prevent your opponents from colonizing within your empire. A planet that you're remote mining may still be inhabitable by an opponent. If you can strip the planet of it's minerals, an opponent isn't as likely to want to establish a colony.

Transporting Freight

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).

Read about each transport method:

Shipping Freight
Creating a Custom Transport Zip Order
Flinging Mass Packets

Shipping Freight

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, select the waypoint where you want to load or unload cargo.

Choose the waypoint where you'll load or unload the cargo.
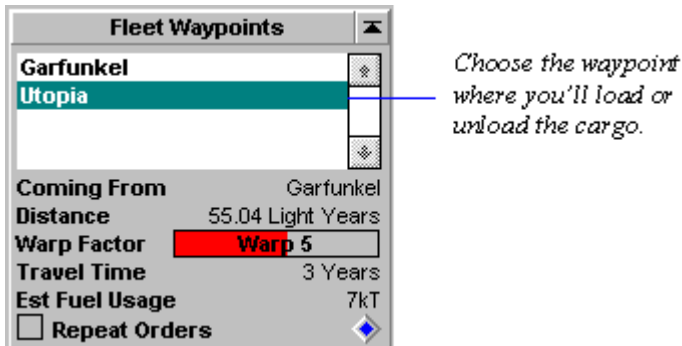
4. In the Waypoints Task tile, specify the Transport orders:

Select Transport as the task.

Select a cargo.

Select a load or unload action
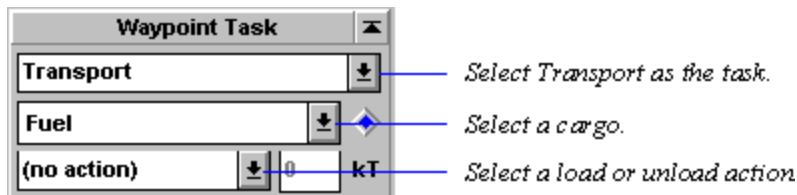
For a description of each action, read about the Transport task.

> 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. 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 to 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 planets, specify the mining fleet as the first waypoint and your planet as the second waypoint. At waypoint zero, your point of origin, specify a Transport order of Fuel, Load Optimal. At the second waypoint, the mining fleet, set Transport orders for each mineral you plan to load, specifying Load from Fleet or Wait for Fleet. At the third waypoint, specify a Transport order of Unload All for each mineral you picked up from the miner.

If you're unloading cargo (fuel, minerals or colonists) at more than one planet, you'll want to unload exact amounts, half, or all. At the last planet, be sure to unload all your remaining cargo.

Creating a Custom Transport Zip Order

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 Tasks 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

⇒ 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 Mass Packets

Flinging a mass packet is a two step process:

Target the Mass Driver

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.

Build and Fling the Packets

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 lower tech receiving accelerators.   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.

5. Select the packets you want to build, then **Add** them to the queue.

The packets are flung as soon as they are built.

The Messages pane informs you each time a packet is sent. Mass packets in scanner range appear in the Scanner as a green square if they're yours 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.

Learn more about:

The Basics of Combat

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.

Read more about the basics of combat:

Fleet-to-fleet Combat

Bombing Planets

Ground Combat

Laying Minefields

Starbase Combat

Declaring Friends and Enemies

Battle Plans

Viewing a Space Battle

Viewing Enemy Fleets

Viewing Enemy Ship Designs

Read about the technical details of battle:

The Guts of Combat.

Fleet-to-Fleet Combat

More about Combat

Playing Stars!

To specify orders for attacking an opponent's fleet, do the following:

1. Add 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 that you'll chase the fleet if they leave the planet. Just right-click on the blue diamond in the Fleet Waypoints tile and choose the enemy fleet.

2. Set a waypoint task to Attack. Specify the battle plan and the targeted player. If you aren't sure who owns the fleet, you can specify everybody or enemies.

Your fleet will either reach the enemy and engage them, or 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.

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.

Firing in Passing

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.

Tips for Fleet-to-Fleet Combat

Use these to help you get started. If they prove effective, keep them up. You'll probably develop your own variations over time, and they'll be even better.

- Speed is almost everything. Your ships will always fire first if they are faster than those of your opponents.

- Torpedoes and fast ships are a great combination. If you have a fleet with torpedo-bearing ships that are faster than your opponent's ships, your torpedo boats will get the last move, then fire first against the other fleet. Torpedoes do their normal damage to the targeted ship type and 1/8 (collateral) damage to ALL other ships within range (your's included--a good reason to stay clear when using torpedoes). One-quarter of a torpedo's damage against its primary target is applied directly to the armor, bypassing the shields. Choosing Lightning Strike as your battle plan option, gives you extra initiative. This tactic can backfire, though, if the enemy has strong armor and weaponry--it'll deflect the brunt of your attack, then cut through your significantly reduced defenses (Lightning Strike trades defenses for speed).

- Cloaked ships that move after firing are passed over in first round of combat. If you have the Inner Strength primary racial trait you can prevent your opponents from doing this by carrying a Tachyon Detector in your fleet.

- Placing all your ships in *one large fleet* allows the fleet to take advantage of overlapping shields for each token and to protect themselves better against torpedo attack.

> If the attacker is using torpedoes you may lose MORE ships if they are separate than

together. For example, your super battleship is loaded with torpedoes doing a total of 2000 points of damage. The target would take 1500dp to the shields and 500dp directly to the armor. All other tokens in the same location take 1/8 damage, or 250 points. You can destroy a lot of ships this way. This simulates a spherical blast radius. If they ships are packed tightly, fewer of them will take damage than if they are spread evenly through the area.

◆ It can also be advantageous to *create many fleets* so that a single powerful opponent that uses primarily beam weapons (such as a super battleship) won't be able to destroy all of your ships in a single shot. A token can only target one square per round unless they are using area effect weapons. If your ships were all in the same token it could destroy them quickly. You can use the Spread Out checkbox in the Battle Plans dialog to help keep your tokens from sticking together.

Fallout from Space Battles

Ships killed by non-area weapons leave fallout. Cargo is dumped 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 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.

Ships that can Avoid Combat

Ships with the Pick Pocket or Robber Baron scanners have an N% chance of avoiding combat, where N is the ship design's cloaking value maxed out at 70% for the Pick Pocket or 80% for the Robber Baron. Each fleet token with the required orders is given a chance to avoid battle. Fleets with attack or patrol orders do not attempt to avoid combat.

Bombing Planets

To specify orders for bombing a planet, do the following:

1. Choose a fleet containing bombers, and set a waypoint to the enemy planet.

2. In the Waypoint Task tile, set a waypoint task of Attack. Use the tile to specify the battle plan.

    In your plan, **Bomb Planet** must be checked. If you aren't sure, open the Battle Plans dialog, then select the plan you specified in the Waypoints Task tile.

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.

If the planet you've targeted is an intermediate waypoint, your fleet will bomb that planet until it is reduced to rubble, then move on.

Smart Bombs destroy colonists, but not Mines orFactories.

Enemy Population Count During Bombing

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.

For information on the damage a bomb can cause, 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

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).

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.

Read more about Mass Drivers:

Ground Combat

To 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.

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 colonists 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 with the primary racial trait of War Monger before you start the game.

Minefields

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.

Who is Affected by Minefields

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

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. Mine fields are partially cloaked until you hit them the first time.

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

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

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

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.)

Learn how to:

Design Ships

Select an Object to Command

Add a Waypoint and Waypoint Task

Sweeping Minefields

More about Minefields

More about Combat

Only ships with beam weapons can sweep minefields.

To locate a minefield, turn on the Scanner pane's Mine Fields overlay.

To sweep for mines:

1. Select the fleet, bringing it into the Command pane.

2. Shift-click on the target minefield, selecting it as the waypoint. If the minefield is around a planet, right-click on the planet and select the minefield from the popup list.

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 **Sweep for Mines**.

5. Specify the number of years to sweep for mines.

The Waypoint task tile notes how many mines that fleet can sweep per field, per year. Stars! supports sweeping more than 32,000 mines a year.

Calculating a Fleet's Mine Sweeping Capability

To determine how many mines a beam weapon can sweep each year, multiply the weapon's Power by 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.

The exception to this formula is the Wide Beam Mine Phaser, capable of sweeping up to 500 mines per mine field per year (using a beam power of 35, with a maximum range of 4). This weapon is available only to those races with the Inner-Strength primary racial trait.

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.

Learn how to:

Select an Object to Command

Add a Waypoint and Waypoint Task

Types of Mines

Normal -- The standard mine, with no special attributes.

- Damage/ship 100 (200 for ramscoops)

- Minimum fleet damage points (dp) 500 (700 for ramscoops)

- Probability of a hit per light year traveled 1% (3% for ramscoops)

- Maximum safe speed Warp 4 (Warp 3 for ramscoops)

The following minelayers can disburse normal mines. All parts marked with * require the primary race trait of Space Demolition:

- Mine Dispenser 80   * (lays 80/year)

- Mine Dispenser 100   (lays 100/year)

- Mine Dispenser 150 * (lays 150/year)

- Mine Dispenser 250 * (lays 250/year)

Mass Discriminator -- these explode only when encountered by large ships.

- Damage/ship 500 (750 for ramscoops)

- Minimum fleet damage points (dp) 2000 (3500 for ramscoops)

- Probability of a hit per light year traveled 1% (3% for ramscoops)

- Maximum safe speed Warp 4 (Warp 3 for ramscoops)

- Trigger mass 200kT (a single ship at least this massive will trigger it)

The following minelayers can distribute mass discriminator mines. All require the Primary Race Trait of Space Demolition:

- Mass Discriminator 100   (lays 100/year)

- Mass Discriminator 230   (lays 230/year)

- Mass Discriminator 400   (lays 400/year)

Speed Traps -- halts the ship but does no damage.

- Damage/ship -- none

- Minimum fleet damage points (dp) -- none

- Probablitity of a hit per light year traveled 10% (20% for ramscoops)

- Maximum safe speed Warp 3 (Warp 2 for ramscoops)

The following minelayers can distribute speed traps:

- Speed Trap 30   (lays 30/year), requires the primary trait of Space Demolition or Inner-Strength.

- Speed Trap 60   (lays 60/year), requires Space Demolition

- Speed Trap 90   (lays 90/year), requires Space Demolition

Starbase Combat

Starbases take part in combat. They don't move but have an initiative of 6 (+1 if you have the War Monger primary racial trait). They are separate from the planet and any fleets, and thus must be targeted separately.

A starbase can be designated as the primary target using the Battle Plans dialog.

Declaring Enemies and Friends

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. Use the Player Relations dialog 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.

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

Unwilling Participants and Innocent Bystanders

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

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 dialog.

Read more about Battle Plans:

Battle Plan Tactics

Specify these tactics in the Battle Plans dialog:

- **Run away as fast as possible** -- after a small delay, these ships retreat at maximum warp. Ships with this option get one round of movement before combat begins.

- **Slowly back away, attacks permitted** -- these ships take slightly longer retreat because as they back away and prepare for warp, they are spending time shooting back.

- **Act as decoys for the rest of the fleet** -- these ships pull away from the main fleet to distract the enemy away from the rest of the fleet while it prepares to attack or retreat.

- **Keep to the maximum weapons range** -- under all circumstances, these ships try to keep as far away as possible from whatever enemy they are attacking. This is a useful tactic for using torpedoes-- they can be fired from great distance but also will inflict collateral damage to the attacker if they are too close to the impact.

- **Keep to the optimal weapons range** -- these ships get as far away as possible without leaving the most effective range for the weapons they are using to attack. This is a useful tactic for using beam weapons which diminish in power as the range extends beyond a certain distance. For torpedoes the optimal range is the maximum range.

- **Get in close and fight it out** -- if you know your opponent only has torpedoes, this tactic will cause him collateral damage from his own torpedoes.

- **Lightning strike** -- Your ships move faster than normal and are much more vulnerable: initiative is increased by 4 points (2 squares of movement), while armor and shields are reduced to 1/4 strength.

- **Defensive advance** -- Your ships move slower than normal, but are stronger: initiative is decreased by 4 points (2 squares of movement), while shields and armor strength are increased 25%.

- **Self Destruct, long range** – Your ships blow up if they are within 4 squares of the target.

- **Self Destruct, medium range** -- Your ships blow up if they are within 2 squares of the target.

- **Self Destruct, close range** -- Your ships reach point blank range before blowing up.

Targeting

Specify the primary target in the Battle Plans dialog.

Targeting Options

- **Unarmed Ships** -- Any ship not carrying weapons or bombs.

- **Scout Ships** -- Any ship of the Scout, Super Scout or Destroyer hull type that is carrying weapons but not bombs.

- **Warships** -- Any ship that is carrying weapons (but not bombs) that is not defined as a Scout.

- **Bombers** -- Any ship carrying bombs is targeted as a Bomber, regardless of hull type.

- **Weakest opponent** -- picks the weakest token to attack.

- **Strongest opponent** -- picks the strongest token to attack.

- **Best Match** -- picks the strongest token this token can probably defeat.

- **Starbase** -- picks the opponent's starbase to attack.

Specifying the Right Target

Make sure your battle plan reflects what you really want your ships to do. For example, if you specify attack closest ship and that 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 blow you away. In this case, choosing a target of enemy warships would be much more appropriate.

General Battle Plan Options

⇒ Select **Spread Out** to place some distance between ships in the fleet. Ships of a type in each fleet will move to maximum range, occupying separate locations whenever possible. This will help prevent all your fleets from being targeted easily by a single large warship. This option also prefers targets that have not been targeted.

⇒ Select **Bomb Planet** if you want bombers to release their bombs upon arrival at the waypoint.

⇒ Select **Dump Cargo** to have fleets jettison their cargo at the start of battle

Making a New Battle Plan

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 **Target** dropdown, select a primary target for the fleet to attack. If there are no targets that match this setting, your fleet will attack the nearest target belonging to whoever you have ordered the fleet to attack.

4. Under **Have All**, select a battle tactic for each type of ship.

5. Click on the **Rename** button and type in a new name.

6. 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

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. To assign a new primary target for the fleet, click in the **Target** dropdown and select a ship type.

3. To select a new battle tactic for each type of ship, click on the drop downs under **Have All**.

4. When you finish, **OK** the dialog. Your changes take affect that turn.

Viewing a Battle in Space

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'll be able to see if they like to use such strategies as getting in close and fighting it out, running away, or keeping to optimum range. You can use this information to compensate for their strategies when you select and design your battle plans.

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.

Viewing Enemy Fleets in the Summary pane

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

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.

Patroling

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

To place a ship on patrol duty:

1. Give the fleet one waypoint in the scanner.

2. In the Waypoints Task tile, select the Patrol task.

3. Select a patrol range and attack plan in the Waypoints Task tile, under the Patrol order. Your fleet will only attempt to intercept enemy fleets it detects within the specified range.

4. Set any additional waypoints. The Patrol order will be carried out automatically for each waypoint, until you assign a different task.

Patrol Targets Enemies Only

Patroling ships 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 Tips

◆   If you order a fleet to Patrol at the current location with no additional waypoints, the fleet will lie in wait until an enemy comes within range and intercepts it. It will then wait at the location of interception until another fleet comes within its range. This continues until you cancel the Patrol order.

◆   If you order a fleet to Patrol the current location with no additional waypoints and check **Repeat Orders**, your fleet will return to its current location after intercepting a detected fleet if it does not detect any other fleet in range. Otherwise it continues to pursue enemy fleets until none are detected, returning then to the location from which you assigned the Patrol order.

◆   If you give a fleet orders to Patrol between two planets (with repeat orders checked), the fleet will intercept the incoming enemy then resume the Patrol line.

◆   If your ship has a Ramscoop engine, send it to patrol between two planets at a low, fuel-producing warp speed (see the Engines section of the Technology Browser to learn the speed).   As it trolls for customers, it will scoop Fuel and fill its fuel tanks. Intercept speed defaults to the greater of the current speed and the ideal warp speed (fuel efficiency <= 120%). Thus if your patrol ship has a Radiating Ramscoop engine, patroling between 2 planets a Warp 5 will slowly fill your fuel tanks, when the intercept is declared, the ship will automatically speed up to Warp 6. If you have enough Fuel in the tank, you can manually increase the speed to Warp 7 or higher.

Learn more about:

[Waypoint Task Tile](#)
[Battle Plan Options](#)

Scanning the Universe

Scanners tell you about:

◆ planetary environments

◆ enemy fleets

◆ minefields

◆ mass 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 and determine any weak areas using the Scanner pane's Radar Overlay.

Read more about Scanning:

Scanner Technology
Selecting Fleets in the Scanner pane
Scanning Planets
Cloaking Fleets
Detecting an Opponent's Fleets

Scanner Technology

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

These scanners can detect fleets in orbit around a planet. They also can tell you planetary statistics from a distance.

Normal Scanners

These scanners cannot penetrate a planet. Any object orbiting the planet is hidden from your radar.

Minefields as Scanners

Minefields act as non-penetrating scanners for the players with the Space Demolition racial trait. These scanners do not detect fleets orbiting planets.

Scanners are Additive

Each scanner after the first adds 20% of the additional scanner's range to the total range. Let's say you have a ship design with two 100 light year scanners and one 60 light year scanner. One of the 100 light year scanners sets the base range. 20% of the second 100 light year scanner and 20% of the 60 light scanner are added to the base, giving a total range of 132 light years (100 + 20 + 12).

Scanners and Primary Traits

Some races have extra scanner technology. For example, if you've chosen Packet Physics as your primary trait, all your mass 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 that's orbiting a planet:

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'll appear 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

When you scan an uninhabited planet, you'll be able to detect the environment and the amount of each mineral under the planet surface, but not the minerals above the surface. If you attempt to scan a planet inhabited by an opponent, you can detect only the environment, underground minerals and an estimate of the population (plus or minus 25%).

If the planet's starbase has cloaks, the distance at which you can detect enemy occupation of the planet is reduced.

Cloaking, or Hiding from an Opponent's Scanners

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. Cloaking is shared by an entire fleet. The cloaking percentage of a fleet is displayed in the Fleet Composition tile, except when in small screen mode.

Cloak Effectiveness

Cloaking percentage is calculated as follows:

In order for matter to be cloaked, it requires a certain number of cloaking units per kT:

100 units/kT	50%	cloaked
300 units/kT	75%	cloaked
600 units/kT	87.5%	cloaked
1000 units/kT	93.75%	cloaked

Cloaking can never exceed 97%

Between those reference points, cloaking percentage is linear. 40 units cloak at 20%, 180 units cloak at 60%, etc.

Ship Cloak units are the sum of all cloaking devices on the ship:

Transport Cloak (50%)	100 units/kT
Stealth Cloak (40%)	80 units/kT
Super-Stealth Cloak (65%)	220 units/kT
Ultra-Stealth Cloak (75%)	300 units/kT
Chameleon Scanner (20%)	40 units/kT

The total number of Cloaking units for a ship is obtained by multiplying the Cloak units by the weight of the ship without cargo.

To determine the percentage a fleet is cloaked, sum up the total number of cloaking units in the fleet and divide by the mass of the fleet, including fuel and cargo.

For example, a small freighter with a Quick Jump 5 engine, Tritanium Armor, and a Transport Cloak weighs 90kT empty. This freighter has 100 units/kT * 90kT = 9000 units of cloaking.

By itself, empty, the freighter is visible to enemy scanners at only 50% of their maximum range. If you completely fill the freighter with fuel and cargo, the ship now weighs 360kT. Its cloaking units/kT are 9000 / 360 = 25 units/kT. The freighter is now only 12.5% cloaked.

Now assume that the empty freighter is placed 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 105kT, so traveling together, this fleet would be 9000 / 105 = 85.7 units/kT approximately 43% cloaked.

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](#).

Advantage of a Second Cloak

Cloaks are completely additive.   Additional cloaks reduce your fleet's visibility.

Types of Cloaks

There are several types of cloaking devices, and one ship-based scanner, the Chameleon, that doubles as a low-level cloak. 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.

Advantage in Battle
Cloaked ships are passed over in the first round of battle targeting.

Detecting an Opponent's Fleets

Scanners

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 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 in Radar mode, ask yourself, "Will there be gaps in my coverage if each scanner only saw half as far? What about one-fourth as far?"

Minefields as Scanners
Minefields act as normal scanners for the players with the Space Demolition racial trait.

Tachyon Detector

This device reduces the effectiveness of other players cloak by 25%. 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 75%, the second detector takes the 75% and reduces it another 25%, reducing the cloak down to 56%. 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 racial 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

You need the Super Stealth primary race trait to pull this off, and a fleet with the Pick Pocket or Robber Baron scanner. Just set the opponent's fleet as a waypoint, and set the Transport order to Load From Fleet, setting the amount you want to heist.

Diplomacy

This version of Stars! has features that allow you to practice simple diplomacy in multi-player games. Use the Message pane to communicate with other players, arranging such things as alliances, rendezvous, trade agreements and non-agression pacts.

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.

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.

The next major release of Stars! will include a wide range of features that integrate diplomacy directly into the game.

Cheating

There's no such thing as a game that doesn't have back doors and secret shortcuts. We think we've closed all those that will give you an unfair advantage (or worse, break the game), and have documented the rest. With a little bit of sweat and elbow grease, you might find a, err, undocumented "shortcut." If so, be sure to write us. If it isn't a game buster, we may enhance it for a future release and offer it as a documented feature. Otherwise we'll caulk it up so fast it'll make your dials spin. In either case, we may send you a free box of Stars! action figures.

There are more obvious ways of cheating, such as sneaking looks at an opponent's screen or cracking the password to an opponent's game file. Depends on how you want to play. This type of cheating is recorded by the Stars! host program and reported to the Stars! Eye in the Sky, then beamed to us back here at Stars! HQ. If you cheat three times, we email your game files to all your opponents, even the AIs. It's nothing personal.

Ordering and Registration

Sure, the unregistered, shareware version is great--more developed than most shareware games you'll find--but it's not enough. You can order the full-blown, registered version by phone, mail or over the World Wide Web. Whenever you order Stars!, you are always purchasing the *latest* version.

Read About Ordering the Registered Version:

Giving the Unregistered Shareware Version to Your Friends

About Shareware

What's in the Registered Version?

Ordering the Registered Version of Stars!

Giving the Unregistered Shareware Version to Your Friends

You can evaluate the unregistered version of Stars! for 30 days; however if you plan to continue using it after 30 days, you must purchase the registered version. Please feel free to distribute the unregistered shareware version to anyone you wish. Just make sure you give them everything that was included in the original .zip file:

- stars!.exe
- stars!.hlp
- readme.txt
- order.txt
- license.txt
- commdlg.dll

Please read license.txt for additional information about distributing Stars!

About Shareware

Millions of computer users have found shareware to be the safest and most risk-free way to buy software. Independent shareware authors, like Star Crossed Software, allow computer users to try out a program before buying it. Computer users can obtain a shareware copy of Stars! (or other shareware programs) for no-charge from a BBS or a friend, or for a small charge from a shareware disk vendor, retail store or flea market. If you find a shareware program to be useful and plan to continue using it after an evaluation period, then you are required to register it with the program's authors. This will entitle you to receive the latest full featured version of Stars!

What's in the Registered Version?

In addition to the large number of features already in the unregistered version, you'll find you have access to technoogy all the way up to level 26. You'll also be able to create larger universes, have access to more advanced universe creation options, and create and save custom races.

If you'd like to learn more about the technology available in the registered version, see what's in the Technology browser and [read the technology data tables](#).

Ordering the Registered Version of Stars!

Stars! comes in a one-user, (really cheap) four-user or a (dirt cheap) eight-user license pack. If you order by phone or mail, you receive Stars! on a single 3.5" disk. If you order over the World Wide Web, it's delivered directly to your hard drive.

Use these topics to help you order:

Ordering by Phone or Mail

Ordering Over the World Wide Web

Ordering by Phone or Mail

The following prices include US postage:

Single user copy: $34

Four user license pack: $80 ($20 a copy)

Eight user license pack: $136 ($17 a copy)

International Postage

Add the following to each order if you're ordering from outside the United States:

Canada: $1

Anywhere else: $6

Upgrade Price

A single user copy must be upgraded as a single user copy. An eight user pack can be upgraded as a four or eight-user pack. You must purchase your upgrade from the original distributor.

$5 for anyone upgrading a single user copy or an eight user license pack purchased *on or after* October 1, 1995.

$15 for anyone upgrading a single user copy purchased *before* October 1, 1995.

$64 for anyone upgrading an eight user license pack purchased *before* October 1, 1995 to an eight-user pack.

Contact your distributor for information on upgrading to a four-user pack.

Phone

Call **503-451-1635**, Monday through Friday, 9 AM to 5 PM, Pacific time. Star Crossed Software accepts Visa, Mastercard, check or money order.

Mail

See the file, *order.txt*, for an order-by-mail form.

Send your check or money order to:

Star Crossed Software
38451 Harrington Road
Lebanon, OR 97355

Ordering Over the World Wide Web

You can also order Stars! over the World Wide Web, at **http://www.webmap.com/stars!**. This allows you to get your hands on the registered version within 24 hours. The website also contains other official Stars! product information, as well as links to sites running Stars games.

Here's what it costs:

Single user copy: $34

Four user license pack: $80 ($20 a copy)

Eight user license pack: $136 ($17 a copy)

Upgrade Price

A single-user copy must be upgraded as a single user copy. An eight-user pack can be upgraded as either a four or eight user pack. You must purchase your upgrade from the original distributor:

$5 for anyone upgrading a single user copy or an eight user license pack purchased *on or after* October 1, 1995.

$15 for anyone upgrading a single user copy purchased *before* October 1, 1995.

$64 for anyone upgrading an eight user license pack purchased *before* October 1, 1995 to an eight-user pack.

See the Web site for information on upgrading to a four user pack. Questions about pricing can also be emailed to **stars@webmap.com**.

What You Need to Play

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:	4 Mbytes for program and help files.
Video display:	Color displays only. 256 colors and a resolution of 800 by 600 or better is strongly recommended. 640 by 480 is playable but cramped.

Tuning Stars for Your Screen Resolution

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.

800 by 600

This is the minimum recommended resolution.

1. Use this menu command: **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.

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**).

Setting Up Play

[General Playing Topics](#)

You can play Stars! alone against one or more AI (computer) players, against other human players or a mix of human and AI players, on a single machine, a network, over a modem, email or bulletin board.

Read more about Setting Up Play:

[Starting a Single Player Game](#)

[Starting a Multi-Player Game](#)

[Playing with a Custom Race](#)

[Hosting a Network Game](#)

[Transferring Game Files using a Modem or Email](#)

Starting a Single Player Game

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 in the dialog. The Custom Race wizard appears. When you're done setting up your game, click on **OK**. The Choose Game Name dialog opens.

2. 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 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.

3. The game begins, with your home world displayed on the screen and in the Command, Scanner and Selection Summary panes. For the first turn, the Messages pane contains tips that help you get started. Once you finish the turn, select the menu command **Turn** (**Generate**) or press the F9 key. Your next turn will generate immediately.

4. To quit, select **File** (**Close**) or **File** (**Exit**). 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.

5. 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 directory containing your saved games.

Starting a Multi-Player Game

Setting Up Play

General Playing Topics

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).

> **Note**: The unregistered version may host both registered and unregistered players. Registered players can progress up to tech level 26, while unregistered players will be limited to tech level 10.

Read more about Starting a Multi-player Game:

What the Host Needs to Do

What Each Player Needs to Do

What the Host Needs to Do

Setting Up Play

As the host, you'll need to do the following steps, some with the help of the other players:

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, and the number and type of players. If you wish, learn about or customize the race for each human player. Each player should choose and customize their own race without being watched by the other players. Alternately, a player can load a customized race file.

   The order of players listed in step 2 of the dialog becomes part of the filename for each player. Keep track of this, telling each player their number. They'll need it when they start to play.

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 Mode dialog appears. Create a password, if you want to prevent other players from opening the game file. If you're playing over a network, click on **Auto Generate**. If you're transferring files using email or modem, click on **Close**.

5. 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.

6. Follow the guidelines for organizing network play or play by transferring files using a modem or email.

Read about:

What Each Player Needs to Do

Files Used in Stars!

What Each Player Needs to Do

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

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

   Playing over a network -- just access the shared play directory (sharepoint) set up by the host.

   Playing via a BBS/modem or email -- you need to 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 under the Stars! directory to keep things simple.

3. Start Stars! and click on **Open Game** from the opening screen. Open your player file, *gamename*.m*N*.

   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.

4. **Network/single machine 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 the text "Turn available".

   Modem 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*.x*N* file to the host system. If you plan to be absent for a turn or more, follow the instructions in .

Read about:

Playing with a Custom Race

[Setting Up Play](#)

[General Playing 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

There are two ways to create a race, each depending on your level of experience, your preferences and objectives.

From the Basic New Game Setup

If you're using the New Game dialog to create a basic, single player setup (recommended for new players):

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.

This race can be played only in the current game, and won't be saved to a race file. If you're new to Stars!, we recommend you play the race to see if it successfully matches your style of play.

If you find you like this race and wish to save it:

1. Run the **View** (**Race...**) command, opening the View Race dialog.

2. Page through the dialog, writing down the race settings on a piece of paper.

3. Run the **File** (**Custom Race Wizard...**) command, opening the Custom Race wizard.

4. Select the options you prefer and save your race to a file for use in future games.

Click here if you would like help using the Custom Race wizard and saving the race to a file.

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.

Click here if you would like help using the Custom Race wizard and saving the race to a file.

Adding an Existing Race to a New Game

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.

Player #4: ◆ --- No Player ---

2.   Select **Custom Race**, **Open...**

Predefined Race	▶	
Custom Race	New...	
Computer Player	Open...	
✓ No Player		
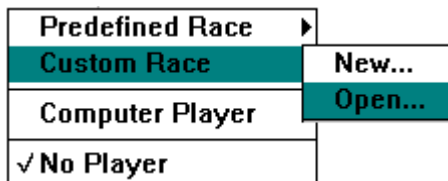
3.   Highlight a race filename, then click **OK**.

Open

File **N**ame:

villian.r1

Directories:

c:\stars

hillbily.r1
villian.r1

📂 c:\
📂 stars
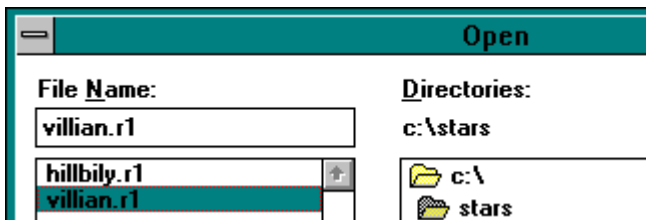
4.   That race will be assigned to the chosen player position.

Player #4: ◆ The Villians (VILLIAN.R1)
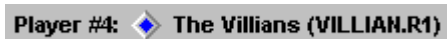
5.   If the selected player position followed any unused positions, those positions will also be assigned to that race.

Editing an Existing Custom Race

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 (typically, *racename.rx*), 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.

Hosting a Network Game

If you haven't run Stars! before, make sure you read Starting a Multi-player Game to help you understand hosting a game.

Set up the game on a shared directory (sharepoint) accessible to all players. Select **Auto Generate** in the Host dialog once you've set up the game. The Host dialog will minimize, waiting for all players to submit their turns. Once that happens, Stars! will automatically generate a new turn, then return to wait mode.

If you want to force a new turn to be generated, even if all players have not yet submitted their turns, 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.

The sharepoint can be on any type of network, as long as the player's machines are running Microsoft Windows (in order to run Stars!).

If you're hosting and playing, you may find it easier to run a second instance of Stars! to handle the host responsibilities.

Transferring Game Files using a Modem or Email

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.

If you're hosting or playing a game where the host is connected to player systems using Remote Access Software (RAS) or other network software, see Hosting a Network Game.

If you haven't run Stars! before, make sure you read Starting a Multi-player Game to help you understand hosting this type of game. The following applies to games where turn files are manually transferred between a remote host and player machines, using modem file transfer software or email.

> **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 the first turn each player needs to download the universe file, *gamename*.xy, and their player file, *gamename*.m*N* (where *N* is the player number), for the newly created game. Alternately, you can upload or email *gamename*.xy and *gamename*.m*N* to each player. These files will be located in the same directory in which you saved the game.

After each player has submitted their turn (in the form of the log file, *gamename*.x*N*) do the following:

1. Open the host file, *gamename*.hst, then select **Generate Now** from the Host dialog. If it is convenient for you to keep an instance of Stars! running, the game may be played as on a network.

2. Once the turn is generated, notify the players that the new turn is available. You can email or upload each newly updated *gamename*.m*N* file or allow each player to download it themselves.

Using a Timer App?

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.

Submitting Your Turn

General Playing Topics

Single player games

Press F9 or select **Turn** (**Generate**).

Multi-player games

Do one of the following:

⇒ Select **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 the text "Turn available".

⇒ Select **File** (**Save and Submit**), then **File** (**Exit**). Or select **File** (**Exit**). You'll be prompted to save and submit before Stars! exits.

Being Absent from Play

Multi-player games only

What to do when you're away and the game doesn't stop.

Playing While Absent

If you're a player:

⇒ Tell the person acting as the game host that you plan to miss one or more turns. The host can substitute a "housekeeper" AI to take your place until you return. This AI will keep planets and fleets active,   making sure your production queues are busy, etc. This AI does not develop any strategy for you.

The next two steps apply to modem, email or BBS players only:

1. Give the host a copy of your history file, *gamename*.h*N*. This will allow the host to update the universe for you while you're gone.

2. Be sure that the person playing 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*.m*N*.

4. If you're running the game over a modem, email or BBS, return the updated history file, *gamename*.h*N*, and player file, *gamename*.m*N*, 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.

Winning

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 default conditions once the game has begun, run the **View** (**Race**) menu command, 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.

Options for Launching Stars!

None of the following options are required to launch a game of Stars! All the options must be used with either a player or host file name argument. Stars! may also be started using only the player or host file name as the only argument.

-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.

Examples

stars! *filename*	Load a player or host file.
stars! -w *gamename***.hst**	Load the host file and enter Auto Generate mode.
stars! -w *gamename***.m***N*	Load the specified player file and wait for the host to generate a new turn.
stars! -t *gamename***.m***N*	Load the specified player file; quit if the host has not yet generated a new turn.
stars! -g *gamename***.hst**	Load the host file, force a new turn and quit.
stars! -w -g *gamename***.hst**	Load the host file, wait for all players to submit turns, generate and quit.
stars! -t -g *gamename***.hst**	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 3.11only).

Exiting Stars!

Select **File** (**Close**) or **File** (**Exit**.). If you've made changes since the beginning of the turn, Stars! will prompt you to save or save and submit your turn.

If you want to erase the changes you've made that turn, before you submit, you can exit without saving, then select **Continue Game** from the opening screen. You'll be back at the start of the turn you just left.

Music and other Sounds

There is no sound in space, or cheesy electronic music (and let's face it, you're going to have to search to find games that don't offer something you want to turn off after a few minutes of play). So this version of Stars! is as silent as the hum of your hard drives.

This means you have total freedom of choice when you choose a soundtrack for Stars!. Just pop in your favorite music CD, tape or (if you're as arcane as we are) drop your favorite album onto the turn-table when you start the game. That way, you'll hear the tracks that fit your style of play (that's what we do).

We spent this release making Stars! the best multi-player, strategy-based space conquest game on the market. Now we're laying out the features for the next release, including sounds that fit a strategy game of this type, and music that does the same. (We also heard that you wanted diplomacy--that's coming, too.)

Full Text Search

You can obtain a version of the Stars! help system that includes a very fast, very effective full text search engine from the Stars! web site at **http://www.webmap.com/stars!**. The help file includes three DLLs to be placed in your Windows **system** directory (otherwise you'll see error messages).

If you are using Microsoft Windows 95, you may not want this enhanced file. However, you should know the full text search provided with the enhanced file is often much faster than the Winhelp full text search mechanism, and the context information is a little more complete. And it's free.

The enhanced file also includes a DLL that allows you to print any number of topics at once, and to access topics using a separate, heirarchical viewer.

Printing the Player's Guide

Stars! help is just that, online help. However, it's large and detailed, with plenty of interrelated topics. If you'd like to easily select and print the topics in this help system for viewing away from your screen (especially if you are using 640x480 resolution), obtain the enhanced version of this help file from the official Stars! web site, **http://www.webmap.com/stars!.**

The enhanced help file also includes a full text search engine that's faster than the engine provided with Microsoft Windows 95, and a separate, heirarchical browser. You'll need to unzip the file, then place the three included DLL files in your Windows system directory. The topic on Printing the Player's Guide in the enhanced file includes instructions on how to print. The enhanced file is free.

Alternately, the Stars! web site has both formatted ASCII text and Microsoft Word versions of the Getting Started, Playing, and Guts sections of this online player's guide. The text version is ready to print. You'll need to have access to MS Word 6.x or better to view and print the Word version, or have a word processor with a filter for importing that type of document. Both files are free.

Customer Support

Support is available by email at **stars@webmap.com**. You can also request support or send feedback from the Stars! Web page:

http://www.webmap.com/stars!

If you receive bad media (on a floppy or downloading from an Internet provider such as Webmap), please contact the distributor.

Submitting Bug Reports

General Playing Topics

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:

   ◆ 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 it's reputation as one of the most stable and bug-free games on the market.

Registration and Copy Protection

When the Registration dialog appears, you'll need to enter the number you received when you purchased your registered copy of Stars!. If you ordered a disk copy, you'll find this 8 character number on the disk label. If you ordered Stars! over the Internet (for example, from Webmap), enter the numbers provided to you by that distributor. (If you haven't received or have lost this number and purchased your copy from Webmap, send mail to **support@webmap.com** with a description of the problem. If you purchased a disk copy and are having problems with the registration number, please contact the distributor.)

You'll also be prompted with the Registration dialog if your system configuration has changed or Stars! thinks it has been reinstalled. In this case, just re-enter the number.

The Registered Version is Copy Protected

Each computer running the registered copy of Stars! must use a copy with a unique and correct serial number. This serial number is provided with your registered copy. The copy protection activates *only* when the following happens:

◆ If you cancel the serial number dialog instead of entering a valid number. Typically, you'll only be asked for a serial number the first time you run Stars!.

◆ If two players each submit turns written by TWO DIFFERENT COMPUTERS, with each player's turn bearing the SAME SERIAL NUMBER. This only affects these players. The host and one player are allowed to run from the same copy.

The latter case means two people are sharing the same registered version on two different computers, and playing in the same game. In this case, Stars! will ask for a legitimate serial number from both players.

If play continues without providing separate serial numbers, random, disadvantageous events and messages are generated in both players' games. In multi-player games, only the players sharing the duplicate numbers are affected.

The host doesn't need a serial number. A registered host can use the same serial number as *one* other player without affecting the host or the player. The person running the host session can also cancel the serial number dialog and set up the game without affecting play.

Unregistered Version

An unregistered host can also successfully host games without limiting anyone's play.

The unregistered version is not copy protected, and does not require or request a serial number.

UNinstalling Stars!

Should you choose to do the unthinkable:

1. Delete the Stars! install directory and its contents.

2. Delete the stars.ini file from your Windows directory.

That's it.

About Data Tables

These tables list statistics on each piece of technology available in Stars!. Use the following guide to 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:

Area Weapons

Other Tables

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Rail Gun	0	0	0	0	0	0
Magno Pulse Mark I	0	9	0	0	0	5
Magno Pulse Mark II	0	16	0	0	0	8
Magno Pulse Mark III	0	23	0	0	0	16
Magno Needle SE	0	11	0	0	0	7
Magno Needle LE	0	17	0	0	0	13
Magno Needle LX	0	24	0	0	0	19

Name	Wt	Resources	Ironium	Boranium	Germanium	Range	DP	Radius
Rail Gun	50	1	1	1	0	9	1	1
Magno Pulse Mark I	2	105	5	12	0	2	85	1
Magno Pulse Mark II	3	115	6	14	0	3	175	2
Magno Pulse Mark III	4	125	6	16	0	4	380	3
Magno Needle SE	1	105	6	16	0	3	150	0

Name	Wt		Propulsion	Construction		
Magno Needle LE	2	115	7	32	0	4	275	0
Magno Needle LX	3	125	7	64	0	5	580	0

Armor

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Tritanium	0	0	0	2	0	0
Crobmnium	0	0	0	4	0	0
Enercell Armor	4	0	0	0	0	0
Strobnium	0	0	0	6	0	0
Plasmotic Armor	7	0	0	0	0	0
Kelarium	0	0	0	9	0	0
Fielded Kelarium	4	0	0	10	0	0
Depleted Neutronium	0	0	0	10	3	0
Neutronium	0	0	0	12	0	0
Valanium	0	0	0	16	0	0
Superlatanium	0	0	0	24	0	0

Name	Wt	Resources	Ironium	Boranium	Germanium	DP
Tritanium	60	10	10	0	0	75
Crobmnium	55	20	12	0	0	125
Enercell Armor	25	25	0	0	20	150
Strobnium	50	30	16	0	0	200
Plasmotic Armor	15	35	0	0	30	275
Kelarium	45	40	20	1	0	300
Fielded Kelarium	40	45	15	0	2	275
Depleted Neutronium	50	40	15	10	0	280
Neutronium	40	60	25	2	1	450
Valanium	35	80	30	2	2	600
Superlatanium	35	100	32	2	2	750

Beam Weapons

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Laser	0	0	0	0	0	0
X-Ray Laser	0	3	0	0	0	0
Yakimora Light Phaser	1	5	0	0	0	0
Wide-Beam Mine Phaser	1	6	0	0	0	0

Name						
Phaser Bazooka	0	7	0	0	0	0
Mini Blaster	0	4	0	0	8	0
Heavy Blaster	2	6	0	0	10	0
Gatling Neutrino Cannon	0	13	0	0	0	0
Big Mutha Cannon	0	16	0	0	0	0
Disruptor	3	20	0	0	0	0
Mega Disruptor	0	22	0	0	0	0
Streaming Pulverizer	0	24	0	0	0	0
Anti-Matter Pulverizer	4	26	0	0	0	0

Name	Wt	Resources	Ironium	Boranium	Germanium	Range	DP
Laser	1	1	0	2	0	1	15
X-Ray Laser	2	1	0	2	0	2	35
Yakimora Light Phaser	1	6	3	12	3	1	70
Wide-Beam Mine Phaser	3	5	3	8	2	4	50
Phaser Bazooka	2	5	2	14	2	2	100
Mini Blaster	2	11	5	2	25	1	175
Heavy Blaster	3	8	4	1	30	3	150
Gatling Neutrino Cannon	2	25	8	50	10	1	250
Big Mutha Cannon	3	20	8	45	8	3	235
Disruptor	1	45	8	60	10	2	420
Mega Disruptor	2	40	6	55	7	3	400
Streaming Pulverizer	1	70	10	65	15	2	610
Anti-Matter Pulverizer	2	60	5	60	10	3	600

Bombs

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Lady Finger Bomb	0	2	0	0	0	0
Black Cat Bomb	0	5	0	0	0	0
M-70 Bomb	0	8	0	0	0	0
M-80 Bomb	0	11	0	0	0	0
Cherry Bomb	0	14	0	0	0	0
LBU-17 Bomb	0	5	0	0	8	0
LBU-32 Bomb	0	10	0	0	10	0
LBU-74 Bomb	0	15	0	0	12	0
Smart Bomb	0	5	0	0	0	7
Neutron Bomb	0	10	0	0	0	10
Enriched Neutron Bomb	0	15	0	0	0	12
Peerless Bomb	0	22	0	0	0	15
Annihilator Bomb	0	26	0	0	0	17

Name	Wt	Resources	Ironium	Boranium	Germanium	%Kill	%Destroy
Lady Finger Bomb	40	5	1	20	0	6	2
Black Cat Bomb	45	11	1	23	0	9	4
M-70 Bomb	50	16	1	27	0	12	6
M-80 Bomb	55	25	1	33	0	17	7
Cherry Bomb	60	38	1	38	0	25	10
LBU-17 Bomb	30	7	1	15	15	2	16
LBU-32 Bomb	35	13	1	24	15	3	28
LBU-74 Bomb	45	33	1	33	12	4	45
Smart Bomb	50	27	1	22	0	9	0
Neutron Bomb	57	30	1	30	0	15	1
Enriched Neutron Bomb	64	37	1	36	0	25	2
Peerless Bomb	55	35	1	33	0	35	1
Annihilator Bomb	50	32	1	30	0	50	0

Engines

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Settler's Delight	0	0	0	0	0	0
Quick Jump 5	0	0	0	0	0	0
Fuel Mizer	0	0	2	0	0	0
Long Hump 6	0	0	3	0	0	0
Daddy Long Legs 7	0	0	5	0	0	0
Alpha Drive 8	0	0	7	0	0	0
Trans-Galactic Drive	0	0	9	0	0	0
Interspace-10	0	0	11	0	0	0
Radiating Hydro-Ram Scoop	2	0	6	0	0	0
Sub-Galactic Fuel Scoop	2	0	8	0	0	0
Trans-Galactic Fuel Scoop	3	0	9	0	0	0
Trans-Galactic Super Scoop	4	0	12	0	0	0
Trans-Galactic Mizer Scoop	4	0	16	0	0	0

Name	Wt	Resources	Ironium	Boranium	Germanium
Settler's Delight	2	2	1	0	1
Quick Jump 5	4	3	3	0	1
Fuel Mizer	6	11	8	0	0
Long Hump 6	10	6	5	0	1
Daddy Long Legs 7	15	12	11	0	3
Alpha Drive 8	17	28	16	0	3
Trans-Galactic Drive	25	50	20	20	9

Interspace-10	20	60	18	25	10
Radiating Hydro-Ram Scoop	10	8	3	2	9
Sub-Galactic Fuel Scoop	20	12	4	4	7
Trans-Galactic Fuel Scoop	19	18	5	4	12
Trans-Galactic Super Scoop	18	24	6	4	16
Trans-Galactic Mizer Scoop	17	20	5	2	13

Name	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6	Fuel 7	Fuel 8	Fuel 9	Fuel 10
Settler's Delight	0	0	0	0	0	0	140	275	480	576
Quick Jump 5	50	50	100	100	100	180	500	800	900	1080
Fuel Mizer	0	0	0	0	35	120	175	235	360	420
Long Hump 6	50	50	60	100	100	105	450	750	900	1080
Daddy Long Legs 7	50	50	60	70	100	100	110	600	750	900
Alpha Drive 8	50	50	50	60	70	100	100	115	700	840
Trans-Galactic Drive	25	35	50	65	80	95	100	100	100	120
Interspace-10	10	15	20	25	30	35	40	45	50	60
Radiating Hydro-Ram Scoop	0	0	0	0	0	0	165	375	600	720
Sub-Galactic Fuel Scoop	0	0	0	0	0	85	105	210	380	456
Trans-Galactic Fuel Scoop	0	0	0	0	0	0	88	100	145	174
Trans-Galactic Super Scoop	0	0	0	0	0	0	0	65	90	108
Trans-Galactic Mizer Scoop	0	0	0	0	0	0	0	0	70	84

Hulls

Other Tables

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech	Wt
Small Freighter	0	0	0	0	0	0	25
Medium Freighter	0	0	0	3	0	0	60
Large Freighter	0	0	0	8	0	0	125
Super Freighter	0	0	0	13	0	0	175
Scout	0	0	0	0	0	0	8
Frigate	0	0	0	6	0	0	8
Destroyer	0	0	0	3	0	0	30
Cruiser	0	0	0	9	0	0	90
Battle Cruiser	0	0	0	10	0	0	160
Battleship	0	0	0	12	0	0	222
Dreadnought	0	0	0	16	0	0	250
Privateer	0	0	0	4	0	0	65
Rogue	0	0	0	9	0	0	100
Galleon	0	0	0	11	0	0	125
Mini-Colony Ship	0	0	0	0	0	0	8
Colony Ship	0	0	0	0	0	0	20

Name							
Mini Bomber	0	0	0	1	0	0	28
B-17 Bomber	0	0	0	4	0	0	69
Stealth Bomber	0	0	0	6	0	0	70
B-52 Bomber	0	0	0	8	0	0	110
Midget Miner	0	0	0	0	0	0	10
Mini-Miner	0	0	0	2	0	0	80
Miner	0	0	0	6	0	0	110
Maxi-Miner	0	0	0	11	0	0	110
Ultra-Miner	0	0	0	14	0	0	100
Fuel Transport	0	0	0	4	0	0	12
Super-Fuel Xport	0	0	0	7	0	0	111
Mini Mine Layer	0	0	0	0	0	0	10
Super Mine Layer	0	0	0	15	0	0	70
Meta Morph	0	0	0	10	0	0	85

Name	Resources	Ironium	Boranium	Germanium	Fuel	Cargo	DP
Small Freighter	20	12	0	17	200	70	50
Medium Freighter	40	20	0	19	275	210	100
Large Freighter	100	35	0	21	600	1200	200
Super Freighter	125	45	0	21	1500	3000	500
Scout	10	4	2	4	50	0	25
Frigate	12	4	2	4	100	0	60
Destroyer	35	15	3	5	150	0	250
Cruiser	85	40	5	8	250	0	500
Battle Cruiser	150	80	10	15	350	0	950
Battleship	275	250	25	20	500	0	2000
Dreadnought	400	275	30	25	650	0	3000
Privateer	50	50	3	2	175	250	300
Rogue	100	100	5	5	350	500	550
Galleon	130	110	5	5	550	1000	900
Mini-Colony Ship	3	2	0	2	30	10	10
Colony Ship	20	10	0	15	100	25	50
Mini Bomber	35	20	5	10	40	0	50
B-17 Bomber	150	55	10	10	100	0	250
Stealth Bomber	175	55	10	15	150	0	225
B-52 Bomber	280	90	15	10	150	0	450
Midget Miner	20	10	0	3	30	120	100
Mini-Miner	50	25	0	6	35	150	150
Miner	110	32	0	6	45	300	300
Maxi-Miner	140	32	0	6	55	500	450
Ultra-Miner	130	30	0	6	80	750	600
Fuel Transport	50	10	0	5	500	0	5
Super-Fuel Xport	70	20	0	8	1000	0	12

Name						
Mini Mine Layer	20	8	2	5	100	0	75
Super Mine Layer	80	55	3	9	1000	0	800
Meta Morph	120	50	12	12	400	300	500

Mine Dispensers

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Mine Dispenser 80	0	0	0	0	0	0
Mine Dispenser 100	2	0	0	0	0	4
Mine Dispenser 150	3	0	0	0	0	7
Mine Dispenser 250	6	0	0	0	0	12
Mass Discriminator 100	5	0	0	0	0	3
Mass Discriminator 230	9	0	0	0	0	5
Mass Discriminator 400	14	0	0	0	0	7
Speed Trap 30	0	0	2	0	0	2
Speed Trap 60	0	0	3	0	0	5
Speed Trap 90	0	0	5	0	0	11

Name	Wt	Resources	Ironium	Boranium	Germanium	Mines/Year
Mine Dispenser 80	25	45	2	10	8	8
Mine Dispenser 100	30	50	2	10	8	10
Mine Dispenser 150	35	75	2	13	11	15
Mine Dispenser 250	40	100	2	17	15	25
Mass Discriminator 100	10	50	2	10	20	10
Mass Discriminator 230	15	80	2	15	30	23
Mass Discriminator 400	20	120	2	20	40	40
Speed Trap 30	35	50	30	0	15	3
Speed Trap 60	40	70	40	0	20	6
Speed Trap 90	45	90	50	0	25	9

Orbital Devices

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Stargate 100/250	0	0	5	5	0	0
Stargate any/300	0	0	6	10	0	0
Stargate 150/500	0	0	11	7	0	0
Stargate 250/500	0	0	9	12	0	0
Stargate 100/any	0	0	16	12	0	0
Stargate any/800	0	0	12	18	0	0

Name						
Stargate any/any	0	0	19	24	0	0
Mass Driver 5	4	0	0	0	0	0
Mass Driver 6	7	0	0	0	0	0
Mass Driver 7	9	0	0	0	0	0
Super Driver 8	11	0	0	0	0	0
Super Driver 9	13	0	0	0	0	0
Ultra Driver 10	15	0	0	0	0	0
Ultra Driver 11	17	0	0	0	0	0
Ultra Driver 12	20	0	0	0	0	0
Ultra Driver 13	24	0	0	0	0	0

Name	Resources	Ironium	Boranium	Germanium	Ability	Ability2
Stargate 100/250	200	25	10	10	100	250
Stargate any/300	250	25	10	10	-1	300
Stargate 150/500	500	25	10	10	150	500
Stargate 250/500	600	25	10	10	250	500
Stargate 100/any	700	25	10	10	100	-1
Stargate any/800	700	25	10	10	-1	800
Stargate any/any	800	25	10	10	-1	-1
Mass Driver 5	70	12	10	10	5	0
Mass Driver 6	144	12	10	10	6	0
Mass Driver 7	256	12	10	10	7	0
Super Driver 8	256	12	10	10	8	0
Super Driver 9	324	12	10	10	9	0
Ultra Driver 10	484	12	10	10	10	0
Ultra Driver 11	484	12	10	10	11	0
Ultra Driver 12	576	12	10	10	12	0
Ultra Driver 13	676	12	10	10	13	0

Planetary Installations

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Viewer 50	0	0	0	0	0	0
Viewer 90	0	0	0	0	1	0
Scoper 150	0	0	0	0	3	0
Scoper 220	0	0	0	0	6	0
Snooper 250X	3	0	0	0	7	3
Snooper 320X	4	0	0	0	9	6
Snooper 400X	5	0	0	0	13	7
SDI	0	0	0	0	0	0
Missile Battery	3	0	0	0	0	0
Laser Battery	6	0	0	0	0	0
Planetary Shield	10	0	0	0	0	0
Neutron Shield	15	0	0	0	0	0

Name	Resources	Ironium	Boranium	Germanium	Ability
Viewer 50	3	0	0	3	50
Viewer 90	12	1	1	12	90
Scoper 150	21	2	2	30	150
Scoper 220	28	3	2	35	220
Snooper 250X	100	10	10	50	250
Snooper 320X	250	15	15	70	320
Snooper 400X	500	25	15	90	400
SDI	25	5	5	5	1.0%
Missile Battery	25	5	5	5	2.0%
Laser Battery	25	5	5	5	2.4%
Planetary Shield	25	5	5	5	3.0%
Neutron Shield	25	5	5	5	3.8%

Robot Mining

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Robo-Midget Miner	0	0	0	0	0	0
Robo-Mini-Miner	0	0	0	2	1	0
Robo-Miner	0	0	0	4	2	0
Robo-Maxi-Miner	0	0	0	7	4	0
Robo-Super-Miner	0	0	0	12	6	0
Robo-Ultra-Miner	0	0	0	13	8	0

Name	Wt	Resources	Ironium	Boranium	Germanium	kT / Year
Robo-Midget Miner	80	40	12	0	4	5
Robo-Mini-Miner	240	85	25	0	6	8
Robo-Miner	240	85	25	0	6	12
Robo-Maxi-Miner	240	85	25	0	6	18
Robo-Super-Miner	240	85	25	0	6	27
Robo-Ultra-Miner	80	40	12	0	4	25

Scanners

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Bat Scanner	0	0	0	0	0	0
Rhino Scanner	0	0	0	0	1	0
Mole Scanner	0	0	0	0	4	0
DNA Scanner	0	0	3	0	0	6
Possum Scanner	0	0	0	0	5	0
Pick Pocket Scanner	4	0	0	0	4	4
Chameleon Scanner	3	0	0	0	6	0
Ferret Scanner	3	0	0	0	7	2
Dolphin Scanner	5	0	0	0	10	4
Gazelle Scanner	4	0	0	0	8	0
RNA Scanner	0	0	5	0	0	10
Cheetah Scanner	5	0	0	0	11	0
Elephant Scanner	6	0	0	0	16	7
Eagle Eye Scanner	6	0	0	0	14	0
Robber Baron Scanner	10	0	0	0	18	10
Peerless Scanner	7	0	0	0	24	0

Name	Wt	Resources	Ironium	Boranium	Germanium	Range
Bat Scanner	2	1	1	0	1	0
Rhino Scanner	5	3	3	0	2	50
Mole Scanner	2	9	2	0	2	100
DNA Scanner	2	5	1	1	1	125
Possum Scanner	3	18	3	0	3	150
Pick Pocket Scanner	15	35	8	10	6	80
Chameleon Scanner	6	25	4	6	4	160
Ferret Scanner	2	36	2	0	8	185
Dolphin Scanner	4	40	5	5	10	220
Gazelle Scanner	5	24	4	0	5	225
RNA Scanner	2	20	1	1	2	230

Name						
Cheetah Scanner	4	50	3	1	13	275
Elephant Scanner	6	70	8	5	14	300
Eagle Eye Scanner	3	64	3	2	21	335
Robber Baron Scanner	20	90	10	10	10	220
Peerless Scanner	4	90	3	2	30	500

Shields

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Mole-skin Shield	0	0	0	0	0	0
Cow-hide Shield	2	0	0	0	0	0
Wolverine Diffuse Shield	4	0	0	0	0	0
Bear Neutrino Barrier	6	0	0	0	0	0
Croby Sharmor	7	0	0	4	0	0
Shadow Shield	7	0	0	0	3	0
Gorilla Delagator	10	0	0	0	0	0
Elephant Hide Fortress	15	0	0	0	0	0
Complete Phase Shield	22	0	0	0	0	0

Name	MASS	Resources	Ironium	Boranium	Germanium	DP	
Mole-skin Shield	2	2	1	0	1	30	
Cow-hide Shield	1	3	2	0	2	50	
Wolverine Diffuse Shield	2	8	5	0	5	80	
Bear Neutrino Barrier	3	12	8	0	8	100	
Croby Sharmor	10	16	12	2	7	80	
Shadow Shield	4	15	8	2	8	90	
Gorilla Delagator	8	18	8	1	12	150	
Elephant Hide Fortress	10	35	30	3	12	300	
Complete Phase Shield	8	90	25	10	12	500	

Specials

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Colonization Module	0	0	0	0	0	0
Transport Cloaking	0	0	0	0	0	0
Stealth Cloak	2	0	0	0	5	0
Super-Stealth Cloak	4	0	0	0	10	0
Ultra-Stealth Cloak	10	0	0	0	12	0
Cargo Pod	0	0	0	3	0	0

Name						
Super Cargo Pod	3	0	0	9	0	0
Fuel Tank	0	0	0	4	0	0
Super Fuel Tank	6	0	4	12	0	0
Jammer 10	2	0	0	0	6	0
Jammer 20	4	0	0	0	10	0
Jammer 30	8	0	0	0	16	0
Jammer 50	16	0	0	0	22	0
Energy Dampener	14	0	8	0	0	0
Tachyon Detector	8	0	0	0	14	0
Stasis Sump	0	14	0	0	0	8
Field Dissipater	14	0	0	0	8	0
Maneuvering Jet	2	0	3	0	0	0
Overthruster	5	0	12	0	0	0

Name	Wt	Resources	Ironium	Boranium	Germanium	Ability
Colonization Module	32	10	12	10	10	1
Transport Cloaking	1	3	2	0	2	100
Stealth Cloak	2	5	2	0	2	70
Super-Stealth Cloak	3	15	8	0	8	140
Ultra-Stealth Cloak	5	25	10	0	10	300
Cargo Pod	5	20	11	0	2	2
Super Cargo Pod	7	30	15	0	2	2
Fuel Tank	5	4	6	0	0	4
Super Fuel Tank	8	20	8	0	0	4
Jammer 10	1	6	0	2	0	10
Jammer 20	1	20	1	5	0	20
Jammer 30	1	40	1	7	0	30
Jammer 50	1	75	2	10	0	50
Energy Dampener	2	50	5	10	0	1
Tachyon Detector	1	70	1	5	0	2
Stasis Sump	10	110	50	0	20	3
Field Dissipater	3	46	10	6	0	4
Maneuvering Jet	5	10	5	5	0	1
Overthruster	5	20	10	7	1	2

Starbases

Other Tables

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Orbital Fort	0	0	0	0	0	0
Space Dock	0	0	0	4	0	0
Space Station	0	0	0	0	0	0

Ultra Station	0	0	0	12	0	0

Name	Resources	Ironium	Boranium	Germanium	Dock Cap	DP
Orbital Fort	20	12	0	17	0	250
Space Dock	150	20	0	19	200	500
Space Station	300	60	40	100	-1	1000
Ultra Station	400	80	50	150	-1	2000

Terraforming

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Total Terraform ±3	0	0	0	0	0	0
Total Terraform ±5	0	0	0	0	0	3
Total Terraform ±7	0	0	0	0	0	6
Total Terraform ±10	0	0	0	0	0	9
Total Terraform ±15	0	0	0	0	0	13
Total Terraform ±20	0	0	0	0	0	17
Total Terraform ±25	0	0	0	0	0	22
Total Terraform ±30	0	0	0	0	0	25
Gravity Terraform ±3	0	0	1	0	0	1
Gravity Terraform ±7	0	0	5	0	0	2
Gravity Terraform ±11	0	0	10	0	0	3
Gravity Terraform ±15	0	0	16	0	0	4
Temp Terraform ±3	1	0	0	0	0	1
Temp Terraform ±7	5	0	0	0	0	2
Temp Terraform ±11	10	0	0	0	0	3
Temp Terraform ±15	16	0	0	0	0	4
Radiation Terraform ±3	0	1	0	0	0	1
Radiation Terraform ±7	0	5	0	0	0	2
Radiation Terraform ±11	0	10	0	0	0	3
Radiation Terraform ±15	0	16	0	0	0	4

Name	Resources	Ironium	Boranium	Germanium	%Terraform
Total Terraform ±3	70	0	0	0	3
Total Terraform ±5	70	0	0	0	5
Total Terraform ±7	70	0	0	0	7
Total Terraform ±10	70	0	0	0	10
Total Terraform ±15	70	0	0	0	15
Total Terraform ±20	70	0	0	0	20
Total Terraform ±25	70	0	0	0	25
Total Terraform ±30	70	0	0	0	30

Gravity Terraform ±3	100	0	0	0	3
Gravity Terraform ±7	100	0	0	0	7
Gravity Terraform ±11	100	0	0	0	11
Gravity Terraform ±15	100	0	0	0	15
Temp Terraform ±3	100	0	0	0	3
Temp Terraform ±7	100	0	0	0	7
Temp Terraform ±11	100	0	0	0	11
Temp Terraform ±15	100	0	0	0	15
Radiation Terraform ±3	100	0	0	0	3
Radiation Terraform ±7	100	0	0	0	7
Radiation Terraform ±11	100	0	0	0	11
Radiation Terraform ±15	100	0	0	0	15

Torpedos

Name	Energy	Weapons	Propulsion	Construction	Electronics	Bio-Tech
Alpha Torpedo	0	0	0	0	0	0
Beta Torpedo	0	3	0	0	0	0
Gamma Torpedo	0	5	1	0	0	0
Delta Torpedo	0	7	1	0	0	0
Epsilon Torpedo	0	9	2	0	0	0
Rho Torpedo	0	11	2	0	0	0
Tao Torpedo	0	15	3	0	0	0
Upsilon Torpedo	0	19	5	0	0	0
Omega Torpedo	0	25	7	0	0	0

Name	Wt	Resources	Ironium	Boranium	Germanium	Range	DP
Alpha Torpedo	15	6	0	4	5	4	8
Beta Torpedo	18	20	1	10	5	4	24
Gamma Torpedo	21	50	5	20	10	5	55
Delta Torpedo	24	70	1	25	10	6	85
Epsilon Torpedo	27	95	5	30	15	8	75
Rho Torpedo	30	110	1	30	15	6	110
Tao Torpedo	33	130	5	35	20	8	140
Upsilon Torpedo	30	150	8	40	20	9	190
Omega Torpedo	27	170	8	40	20	9	270