

GRedSpot 3.6 - February 18th, 1994

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GRedSpot is a shareware MicroSoft Windows 3.x program that displays the current position of the Great Red Spot on the planet Jupiter, and the four Galilean moons Io, Europa, Ganymede and Callisto in an icon. You can set the icon to display the moons above or below a half-icon of Jupiter, just show the moons or just display the full Jupiter icon. You can specify the icon's title to display the current longitude of the Spot, a list of today's transit times, and the time remaining until the next transit. If you wish, you can also configure the title to just be a clock, displaying the current time and/or date.

Simply use the Program Manager to create a New Program Icon in the group of your choice and set the *Working Directory* to the subdirectory where you installed the program files. You may place the files in the subdirectory of your choice, but the software **must** be able to find it's GREDSLOT.INI file there.

If it cannot find the .INI file, then the **About** box will be displayed *each and every time* you start **GRedSpot**. See the section [Troubleshooting](#) for more information.

I also recommend placing the Program Icon in the **Startup** group so it loads every time you start Windows.

If you don't already have the file **BWCC.DLL**, make sure you copy it to your Windows system subdirectory and erase any other older copies of it. See the file **BWCC.TXT** for more information.

Before you can use **GRedSpot**, you need to tell it where you live and how to adjust for daylight savings time. You can also select **many** different options as well. Select the following links for more information:

[Setting your Time Zone](#)

[Adjusting for Daylight Savings/Summer Time](#)

[Animating the GRedSpot icon](#)

[Great Red Spot's Longitude](#)

[Background Colors](#)

["Always on top" feature](#)

Once you have set all the above options, you will probably want to have a look at how you can [change the icon's title](#). This option allows you to configure the title to display various information about Jupiter and it's moons.

GRedSpot must know the **time zone** in which you live to display the icon properly. The default is the Eastern Standard Time time zone, which is valid for cities in the United States such as New York City, Boston and Miami. If you live in another time zone, you must select it yourself.

When you first run **GRedSpot**, the program's **About** box appears. Here you'll find a list box containing all of the world's time zones. Simply select the one in which you live.

There is a check box if you want the **Daylight Savings Time** (Summer Time) adjustment applied or not. Check this box if your area observes Daylight Savings Time. Just below this, there are four radio buttons to determine which set of summer-time dates you wish to use. If you select *Manual*, the daylight savings time adjustment will be applied **regardless** of today's date. This means you must change the above check box twice a year when the time changes. You may need to select this option if your region is not listed below. Tables that list the daylight savings time start/stop dates for the other radio buttons follow below. If you select one of these, the daylight savings time adjustment will be applied or not-applied **automatically** based on today's date. All daylight savings time adjustments subtract 1 hour from the current time.

United States:

1994 - Start: April 3rd	End: October 30th
1995 - Start: April 2nd	End: October 29th
1996 - Start: April 7th	End: October 27th
1997 - Start: April 6th	End: October 26th

UK:

1994 - Start: March 27th	End: October 23rd
1995 - Start: March 26th	End: October 22nd
1996 - Start: March 24th	End: October 27th
1997 - Start: March 23rd	End: October 26th

Europe:

1994 - Start: March 27th	End: September 25th
1995 - Start: March 26th	End: September 24th
1996 - Start: March 24th	End: September 22nd
1997 - Start: March 23rd	End: September 28th

If you live in one of these regions and the above dates are incorrect, OR if you live in another region not listed above, please contact me with the correct dates so I can update my software.

You can also select an **update interval** for the **GRedSpot** icon. The default is *Real-Time*, which shows the current position of the Spot. South is at the top to match the view in a telescope. Other values are available to **animate** the icon, or to display a new icon once every update interval. The values you may choose from are once every second, once every five seconds or once every ten seconds.

Note that when the Spot is on the far side of Jupiter, it is still visible as a dotted outline.

You can also have the icon **rotate** in the normal forward direction, or in reverse. Just click on the appropriate radio button.

You can change the **title** beneath the icon to whatever you like. More importantly, you can have other information such as transit times displayed here as well.

The **About** box has the default icon title set to $\sim N$, which is a special "code" to display the number of hours and minutes until the next transit.

If you prefer, you can change the title to be just a simple word or two, like "Jupiter" or "Jupiter's Great Red Spot". This may be necessary to work with some screen savers.

All the available options are listed below:

Jupiter options:

- $\sim N$ = Next transit time in expanded format (i.e. "Next transit: 5 hours, 32 min" and "Last transit: 46 minutes ago").
- $\sim n$ = Next transit time in hh:mm format.
- $\sim L$ = List all transit times for today. Used in conjunction with ~ 1 , ~ 2 , $\sim a$, $\sim A$, $\sim p$, $\sim P$ described below. (i.e. " $\sim L \sim a \sim 1$ " displays times such as "12:23am, 10:15am, 8:03pm"). Note that the 'a' comes before the '1', the opposite of how these options work when configuring the icon title as a clock (see *Clock options* below).
- $\sim c$ = Central Meridian relative to Earth to the nearest degree (i.e. 273°). Zero degrees means the Great Red Spot is directly facing Earth, 180° means it's facing directly away, etc.
- $\sim C$ = Central Meridian to the nearest one-tenth of a degree (i.e. 273.4°).
- $\sim g$ = Great Red Spot's Meridian to the nearest whole degree.
- $\sim G$ = Great Red Spot's Meridian to the nearest one-tenth of a degree.
- $\sim T$ = Time next transit will occur. Use with "Clock options" below. (i.e. "Next Transit: $\sim T \sim 1 \sim a$ " will display as "Next Transit: 8:03pm")
If there are no more transits today, "Tomorrow" will be displayed.

Satellite options:

- $\sim s1$ = Show Io's orbital degree position (Use $\sim S1$ to the nearest 1/10th)
- $\sim s2$ = Show Europa's orbital degree position (Use $\sim S2$ to the nearest 1/10th)
- $\sim s3$ = Show Ganymede's orbital degree position (Use $\sim S3$ to the nearest 1/10th)
- $\sim s4$ = Show Callisto's orbital degree position (Use $\sim S4$ to the nearest 1/10th)

Clock options:

- ~ 1 = 12-hour format
- ~ 2 = 24-hour format
- $\sim a$ = "am" or "pm"
- $\sim A$ = "AM" or "PM"
- $\sim p$ = "a" or "p"
- $\sim P$ = "A" or "P"
- $\sim w$ = Weekday name as "Mon", "Tue", etc.

- ~W = Weekday name as "Monday", "Tuesday", etc.
- ~m = Month name as "Jan", "Feb", etc.
- ~M = Month name as "January", "February", etc.
- ~h = Month number (1-12)
- ~d = Day of the month number (1-31)
- ~y = Year as "94", etc. (Year without the century)
- ~Y = Year as "1994", etc. (Year with the century)
- ~o = Ordinal suffix of "Day of the month" as "st", "nd", "rd", "th", etc. (as in 1st, 2nd, 3rd, 4th, etc.)

Example icon titles:

Title:	Displays as:
"Next transit: ~T~1~a"	Next transit: 9:05pm
"Next transit: ~T~2 ~g"	Next transit: 21:05 275°
"I.~s1 E.~s2 G.~s3 C.~s4"	I.182° E.37° G.349° C.206°
"~N"	Next transit: 4 hours, 32 min
"~L~2"	00:23, 10:15, 20:03
"~1~a ~W ~m ~d~o"	9:05pm Fri Feb 18th
"~1~A"	9:05PM
"~W ~M ~d ~Y"	Friday February 18 1994
"~y.~h.~d"	94.02.18
"Jupiter"	Jupiter

Feel free to experiment with different combinations to suit your taste.

In the **About** box, there's a field for the **longitude** of the Great Red Spot. Each location on the surface of a solid planet such as Earth will always remain, of course, at the same latitude and longitude. The Great Red Spot, however, is a huge "storm" high in Jupiter's atmosphere. Because of this, and also due to the fast rotation speed of the planet (the fastest in the Solar System), it has been known to "drift" up to several degrees in longitude. Currently, the Great Red Spot's longitude is 35 degrees relative to the planet's Central Meridian. You may want to consult your favorite astronomy magazine a few times a year so you can adjust this longitude value for the best possible accuracy.

You can select one of many different **background colors**. The default is black, but you can select white or a shade of gray if you prefer. The "transparent" color allows you to display Jupiter with no background, appearing on top of whatever is beneath it.

In addition to the **About** box, there is also another dialog box called **Galilean Satellites** to configure the display of the four major Jovian moons discovered by Galileo: Io, Europa, Ganymede and Callisto. You can set the program to display the moons either above or below a half-icon of Jupiter, show just the moons in the center of the icon space, or display the full icon of Jupiter. Simply click on the appropriate radio button.

You can also select the Satellite Colors, the Inclination angle of the satellites, and the size of Jupiter and the moons.

You can view the Satellite Orbital Periods here.

You can set the **colors** of the moons and the small image of Jupiter by changing the Red, Green and Blue values to the ones you want. Each color value is from 0 (no color) to 255 (full color). By mixing and matching the values, you can create any color you wish.

You can change the **size** of each moon from one pixel (the default) to two pixels. Likewise, the size of Jupiter can be changed from 2 pixels to four. Please note, however, that the scale of the Jovian system is exaggerated when the larger pixel sizes are used, but the icon is easier to view from a distance this way.

An important feature on the **Galilean Satellites** dialog box is the **Incline Angle**. The radio buttons default to *As seen from Earth*. Presently and for the next few years, the plane of Jupiter's moons is tilted approximately 3 degrees with respect to the Earth. **GRedSpot** defaults to this value when displaying the moons, creating an image as seen from a small telescope or binoculars. For an overhead view of Jupiter, click on the radio button *Above Jupiter looking down*. This automatically sets the Incline Angle to 90 degrees and sets the radio button for *Only show the moons*. Earth is now directly "down" from the icon; moons that are "above" Jupiter are behind the planet, or farther from Earth, and those that are "below" Jupiter are in front, or nearer to Earth.

The *Other* radio button lets you select your own inclination angle and does not change any other button settings. After clicking this button, enter your own value from -90 to 90 degrees.

Experiment with different values and combinations until you find a viewing angle that suits your taste.

Io: 1 day, 18 hours, 28 minutes
Europa: 3 days, 13 hours, 14 minutes
Ganymede: 7 days, 3 hours, 43 minutes
Callisto: 16 days, 16 hours, 32 minutes

(From Peterson's Field Guide)

You can click the *Icon is always on top of windows* button **on** to have the **GRedSpot** icon stay visible when other windows are covering it. When on, the icon will always appear "on top of" the other windows instead of being "hidden" beneath them.

When you select the **GRS Transit Times** window, the current date and time, the position of the Spot displayed in degrees, and all of today's transit times in 24-hour format are displayed and updated every few seconds. The orbital position in degrees for each moon is also displayed.

Press the Minimize button in the upper right corner to shrink the window back to an icon.

In the default configuration, **GRedSpot** displays the time until the next transit beneath the icon. Since this will automatically update the icon's title once per minute, this may cause some **screen savers**, which can sense such activity, to never activate. A simple solution is to change the *Icon Title* field in the About box to some simple word or words, such as "Jupiter" or "Jupiter's Great Red Spot". You will not be able to use **GRedSpot**'s clock feature (although you could still display the date), but your screen savers should work again.

Look for EARTHSxx.ZIP, a Windows icon that shows the current sunlit-side of Earth, MARSICxx.ZIP, a Windows icon that shows the current view of the planet Mars and SOLSYSxx.ZIP, a Windows icon that shows the current position of the nine planets in our Solar System. All three have been released and are available at the Internet FTP site **oak.oakland.edu** and it's mirrors, **ftp.cica.indiana.edu** and it's mirrors, and at the Software Creations BBS, **(508) 365-2359** (2400,N,8,1), all in the USA. All users receive the shareware versions of these programs when they register.

The current versions are **EARTHS26.ZIP**, **MARSIC26.ZIP** and **SOLSYS10.ZIP**.

Print out the file ORDER.FRM to get a quick order form for registering **GRedSpot**. This shareware version is not cripple-ware, nag-ware or free-ware, although it will remind you every 5 times to register until the evaluation period expires. When you do register, you will receive the latest executable version that allows **UNLIMITED** use of the program with no reminder box and no expiration.

All future versions/upgrades of this program are **FREE** to registered users. When a new shareware version becomes available, just download it and copy the new files to the registered version's subdirectory. It's that simple!

The cost of the diskette and the mailing charges are all included in the **US \$10** registration fee. Personal checks, money orders and American Express travelers checks are all accepted (sorry, I do not yet accept credit card orders). If you wish, you may register for US \$20 and receive the full Borland C++ 3.1 source code and Windows resource files used to make this program as well. The source code for each future version will be available **free** for registered source-code users.

If you find **GRedSpot** useful, please upload it to other bulletin boards and/or Internet FTP sites so other people can enjoy it, too!

GRedSpot 3.6 - Order Form

Return this form along with:

US \$10: for the latest registered executable version

OR

US \$20: for the latest version PLUS the full Borland C++ 3.1
source code and Windows resource files

to:

W. Scott Thoman
41 Lee Road
Dryden, NY 13053 USA

Registered users are entitled to ALL upgrades AT NO EXTRA COST!
When a new shareware version becomes available, just download it
and copy the new files to your registered version's directory.

Personal checks, money orders and American Express traveler's
checks are all accepted. (Sorry, I do not yet accept credit
card orders). You will also receive the shareware version of
3 other icon-programs, one for Earth (EarthSun; EARTHS26.ZIP)
Mars (MarsIcon; MARSIC26.ZIP) and (SolSys; SOLSYS10.ZIP).

Name _____

Address _____

Internet/CompuServe Address: _____

Can I e-mail it to you? ___ .ZIP file ___ UUENCODEd ___ No

Where did you hear about GRedSpot? _____

Disk size: ___ 5.25" ___ 3.5"

Comments: _____

THANK YOU!

If you have improved the existing **icons**, or have created any new icons to improve the animation, please send them to me and I might include them, along with your name and my thanks, in future versions. If I use your contributions, you will receive the latest registered executable version **free**, including the **source code**, for your efforts.

If you get the **About** box each and every time you start the program, make **sure** you have the program icon's *Working Directory* set to the directory where you have the GREDSLOT.EXE file. This allows the program to properly find its .INI file. Make sure your GREDSLOT.INI file is in the same subdirectory as the GREDSLOT.EXE file; if it isn't, move it to that subdirectory. This is the recommended way to keep all of **GRedSpot**'s files together.

If you prefer, you may also set the *Working Directory* to your Windows subdirectory explicitly, or just leave it blank to have it default to your Windows subdirectory. Again, just make **sure** that GREDSLOT.INI is, indeed, located there.

Finally, make sure the .INI file is marked as read/write (this is the default); do **NOT** mark this file as read-only.

Many thanks go to **Peter Hayes** (peter.hayes@uk.cray.com) in England for the information he supplied to me on the daylight savings time issues in the UK and Europe, and to **Dan Bruton** of Texas A&M University (the author of the program **GALSAT50**) for his *extensive* help with the satellite calculations.

Thanks also to **Eric Rickin** (erickin@umich.edu) for pointing me in the right direction, namely to **Don LeClair** (71534.3255@compuserve.com) for help on doing transparent backgrounds and having icons stay "always on top".

Hi Mom and Dad, Grandma and Grandpa, Brian, Joe, and my wife, Robin.

GRedSpot - Revision History

- 02/18/94 Version 3.6 - Added support for transparent backgrounds. Added the "always on top" check box. Added printable order forms directly from the help system.
- 01/18/94 Version 3.5 - Added help system, improved dialog boxes, user can now change the size of Jupiter and the moons for easier viewing, support for moon orbital positions in icon title.
- 12/21/93 Version 3.0 - Added support for the four Galilean Satellites. Minor optimizations and improvements.
- 11/24/93 Version 2.0 - Initial release. All options are now fully user-configurable on the About screen and saved in GREDSLOT.INI. Added support for all timezones, daylight savings time, and update intervals. Support for displaying transits, date and time in many formats. Improved all of the icons. Using straight Windows API calls instead of OWL.
- 07/12/93 Version 1.0 - First version. Used BC++/OWL as a framework.

Any suggestions, bugs, ideas, complaints? Let me know what you think of this program so I can improve it! Please include the version number you are using in all correspondence; this is version 3.6.

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Thank you for using GRedSpot!

If you're familiar with the idea behind Shareware, then you know that Shareware is the ultimate in **money-back guarantees**.

Most money-back guarantees work like this: You pay for the product and then have some period of time to try it out and see whether or not you like it. If you don't like it or find that it doesn't do what you need, you return it (undamaged) and at some point - which might take months - you get your money back. Some software companies won't even let you try their product! In order to qualify for a refund, the diskette envelope must have an unbroken seal. With these "licensing" agreements, you only qualify for your money back if you haven't tried the product. How absurd!

Shareware is very different. With Shareware, you get to **try it** for a limited time, **without spending a penny**. If you decide not to continue using it, you throw it away and forget all about it. No paperwork, phone calls, or correspondence to waste your valuable time.

Software authors who use the Shareware method of distribution feel that Shareware is the **best** way to try a product. You are able to try it on your own system(s), in your own special work environment, with no sales people looking over your shoulder. Have you ever purchased a car and realized that if you could have test driven it for 30 days your purchase decision might have been different? With Shareware, these problems can be avoided - you **do** have a 30 day test-drive!

After trying a Shareware product and deciding to continue to use it, then - and only then - do you pay for it. Not only that, but Shareware is traditionally **much less expensive** simply because you are paying for the software, not the advertising and marketing that comprises the majority of the cost of most software (a one-page ad in PC Magazine, one time, can cost upwards of \$20,000). If the try-before-you-buy concept sounds like an ideal way to make your purchase decisions, you're right!

Some companies burden their products with annoying copy protection schemes because they don't trust their users. Shareware developers not only don't use copy protection, they **freely distribute** their products because they trust their users.

Someone once said that you should never trust software which doesn't trust you. This makes a lot of sense - no wonder Shareware is becoming so popular among users and developers.

Shareware is a distribution method, **not** a type of software.

Shareware is produced by accomplished programmers, just like retail software. There is good and bad Shareware, just as there is good and bad retail software. The primary difference between Shareware and retail software is that with Shareware you know if it's good or bad **before** you pay for it. Registration of Shareware products, in addition to being required, is also an incentive for programmers to continue to produce quality software for the Shareware market.

There is another significant advantage to Shareware - it allows small companies to make software available without the hundreds of thousands of dollars in expenses that it takes to launch a traditional retail software product. There are many programs on the market today which would never have become available without the Shareware marketing method. Please show your support for Shareware by registering those programs you actually use and by passing them on to others.

Thank you for your support!

