

Offered Title: Jupiter's Great Red Spot

Something is happening on Jupiter. The Great Red Spot (GRS) is shrinking, like a giant skein of adobe-red yarn unraveling. Some estimates give it 20 years, and then it's gone.

The GRS has been a fixture on Jupiter and a major motivator of Jovian study for many years. The official year of documented observation, by German amateur astronomer Samuel Heinrich Schwabe, is 1831, but sightings were reported as far back as the 1600's. So, yeah, the GRS has been around a while.

What's so great about the GRS? It's size for one, currently it's about 1.3 times the size of planet Earth, but measurements by astronomers in the late 1800's had the GRS at 3 times Earth's diameter! Oh, and it's RED! OK, not candy apple or cardinal, more pastel like adobe, but it's still red...ish.

No one knows when or under what conditions the GRS started its rein of domination on Jupiter, but we do know a few things about it.

The Earth could drop into the GRS like a basketball through the rim with room to spare, all net. The GRS is called an "anticyclone". It's a gigantic high atmospheric pressure storm, located in the southern hemisphere of Jupiter and rotating counterclockwise. Wind speeds reach 268 mph at the storm's edge but become calm toward its center. Wonder what it looks like there. Since Jupiter is a ball of gas the GRS doesn't have friction producing land to disrupt it, so it just keeps sliding along. Another wild thing, because it's a gas ball, Jupiter's atmosphere rotates at variable rates where some parts take longer to rotate than others.

Jupiter's rapid overall rotation rate of around 10 hours creates monstrous Coriolis effects that in combination with convection currents result in highly disturbed cloud bands and zones, jet streams that rotate in opposite directions. The GRS is caught between two, the South Equatorial Belt and the South Tropical Zone and they help keep the GRS spinning.

Why is it red? After sending numerous probes to check Jupiter out and combining that data with ground-based observations we can definitely say were not sure. That's the way with science. We examine and examine only to end up sometimes with more questions than answers. In the case of the GRS current thinking is that ammonium hydrosulfide, dredged up from deeper inside Jupiter reacts with ultraviolet light to form the adobe red colors.

The GRS is shrinking. Estimates from the late 1800s gave a long axis of 25,500 miles. The Voyager fly-bys in 1979 measured it at 14,500 miles. A 1995 Hubble photo gave 11,130 miles for the long axis.

No one knows why.

What's in the Sky?

June 16; after sunset; southeast: A big Moon, Jupiter and Antares team up

June 18; after sunset; west-northwest: Mars and Mercury are close on the horizon. Use binoculars

June 18; late night; south-southeast: A big Moon is close to Saturn