

Episode -4: Saturn's Hot Spot

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Travis: Welcome to the February 6, 2005 edition of Slacker Astronomy, a podcast about astronomy and just about anything else that gets in our way. This is our first ever podcast. Every Monday for the next four weeks we'll release experimental podcasts. These will be tests to see what works and what doesn't. We hope to have found our voice by March 14, when we'll officially launch our real weekly podcast and try to actually be semi coherent and entertaining. So stop by slackerastronomy.org and give us some honest feedback. We also have posted a podcast there with background on us and details on what we hope to do with this thing.

Our goal is to bring you a weekly summary of a recent news event in the world of astronomy. And if nothing happens? Well then we'll make it up. It's good enough for the New York Times then it's good enough for us right? But unfortunately for the ombudsman union, today's story is real and about one of the most majestic planets in our solar system: Saturn.

Pamela: Our sixth planet, Saturn, most famous for its rings, is a cold ball of gas about 750 million miles away from us. Driving 55, it would take you 568,000 years to get there. Or about the same amount of time it takes to download the MSN home page.

Travis: Saturn is so far away that the Sun only looks like a very bright star from its cloud tops. As a result, it is very cold, about negative 301 degrees Fahrenheit. On February 3, astronomers at the Jet Propulsion Laboratory revealed pictures of Saturn taken in the infrared. This means they were looking at the Saturn's heat, similar to the first person shots you see in the movie Predator. In these images a hot spot is detected in the middle of the southern polar cap of Saturn. This is a surprise because in most cases we expect the poles to be colder, not warmer, like the arctic areas of Earth and the ice caps on Mars and the Moon. So instead of being colder, why is it **warmer** at the poles on Saturn?

Pamela: To keep things in perspective, these "warm" areas are actually a balmy negative 296 degrees, only about 5 degrees warmer than the rest of the planet. In pictures of Saturn taken with regular cameras these areas at the poles appear darker than other areas of Saturn. So one theory proposed by these astronomers at JPL is that dark dust is collecting at the poles and heating it up just like the dark seats of your car get warm in the summer. But that is really nothing more than an educated guess, like most things in astronomy.

Travis: NASA has a spacecraft orbiting Saturn called Cassini. You may have heard

about it lately because it carried the Huygens probe that landed on Saturn's moon Titan last month. Cassini is expected to pass over Saturn's south pole soon so we may have an answer in a year or so. Also, we have not been able to look at the Northern polar cap on Saturn. Saturn is tilted, like the Earth, and right now the northern cap is pointed away from us. It is currently in perpetual darkness, so it will be interesting to see whether it is also warmer than the rest of the planet. Since we can't see it from Earth, only Cassini will be able to tell the next time it passes over the North Pole.

Pamela: In the meanwhile, we have put up a poll on our web site at slackerastronomy.org where you can guess the cause of the heat. The winner will get a star named after them. The star name will be recorded in the official Slacker Astronomy Stellar Catalog and Database, which is kept on a slightly coffee stained napkin stuffed in between the seats of my Jeep. Links to the JPL press release and the infrared picture of Saturn are available in our show notes on our web site. Stop by to subscribe to our podcasts, download past shows or to spam our discussion boards with conspiracy theories. All we ask is that make them entertaining. This is Pamela Gay and on behalf of Travis and Aaron thanks for listening and no, you don't get your 4 minutes back.

Travis: Clear Skies and Clear Bandwidth. This has been Slacker Astronomy, a volunteer collaboration for you, for fun, for the voices in our heads.