THE STAR DIAGONAL

THE JOURNAL OF THE OGDEN ASTRONOMICAL SOCIETY

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Meeting Announcement

The annual BBQ of the Ogden Astronomical Society will be held on June 11, 2015 at 7:00pm at Doug Say's home. His address is 2060 West 1025 North in Farr West.

President's Message

Finally a little sunshine and clear skies it's been a long time coming, our star party record is pretty dismal so far this year. I hope we can get a change soon. This month we have two activities, there won't be a meeting at the planetarium on Thursday the 11th, instead we will have our annual BBQ and family get together that night at Doug Say's house at 7:00 PM. His address is 2060 West 1025 North in Farr West. The club will provide Hamburgers, Hot Dogs and all the fixins. If you want to bring a side dish or a dessert please do so but it's not expected. The second activity will be our Antelope Island star party on June 20th we will start Solar Viewing at 7:00 PM. And for those planning their summer activities, we have our Monte Cristo camp outs July 17th and 18th and August 14th and 15th. I hope everyone has a great summer.

Thanks,
Lee Priest

OAS Minutes – May 2015

The monthly meeting of the Ogden Astronomical Society was held on May 14, 2015 at 7:30pm at the Ott Planetarium. President Lee Priest conducted the meeting.

Announcements

- 5/16 Antelope Island
- 5/15 – Corrine
- 5/11 – Leadership Learning Academy

For our meeting this month we discussed light traveling through space and why we don't see a galaxy in multiple places and times when we look up. We also watched a video from "A Visual Guide to the Universe" called "Future Supernova, Eta Carinae".

Meeting adjourned at about 9:00.

Star Parties

Public

- 6/20 – Antelope Island
- 8/8 – Antelope Island
- 9/10–9/13 – Great Basin Astronomy Festival
- 9/19 – Antelope Island
- 10/17 – Antelope Island

Requested

Private

- 6/11 – Annual BBQ at Doug's
- 7/17-7/19 – Monte Cristo (many arrive by Weds or Thurs)
- 8/14-8/16 – Monte Cristo
- 10/9-10/11 – Messier Marathon (Curlew)

The "G" in GOES Is What Makes It Go

By Ethan Siegel

Going up into space is the best way to view the universe, eliminating all the distortionary effects of weather, clouds, temperature variations and the atmosphere's airflow all in one swoop. It's also the best way, so long as you're up at high enough altitudes, to view an entire 50 percent of Earth all at once. And if you place your observatory at just the right location, you can observe the *same* hemisphere of Earth continuously, tracking the changes and behavior of our atmosphere for many years.

The trick, believe it or not, was worked out by Kepler some 400 years ago! The same scientist who discovered that planets orbit the sun in ellipses also figured out the relationship between how distant an object needs to be from a much more massive one in order to have a certain orbital period. All you need to know is the period and distance of one satellite for any given body, and you can figure out the necessary distance to have any desired period. Luckily for us, planet Earth has a natural satellite—the moon—and just from that information, we can figure out how distant an artificial satellite would need to be to have an orbital period that exactly matches the length of a day and the rotational speed of Earth. For our world, that means an orbital distance of 42,164 km (26,199 miles) from Earth's center, or 35,786 km (22,236 miles) above mean sea level.

We call that orbit *geosynchronous* or *geostationary*, meaning that a satellite at that distance always remains above the exact same location on our world. Other effects—like solar wind, radiation pressure and the moon—require onboard thrusters to maintain the satellite's precisely desired position above any given point on Earth's surface. While geostationary satellites have been in use since 1963, it was only in 1974 that the Synchronous Meteorological Satellite (SMS) program began to monitor Earth's weather with them, growing into the Geostationary Operational Environmental Satellite (GOES) program the next year. For 40 years now, GOES satellites have monitored the Earth's weather continuously, with a total of 16 satellites having been launched as part of the program. To the delight of NASA (and Ghostbusters) fans everywhere, GOES-R series will launch in 2016, with thrice the spectral information, four times the spatial resolution and five times the coverage speed of its predecessors, with many other improved capabilities. Yet it's the simplicity of gravity and the geostationary "G" in *GOES* that gives us the power to observe our hemisphere all at once, continuously, and for as long as we like!

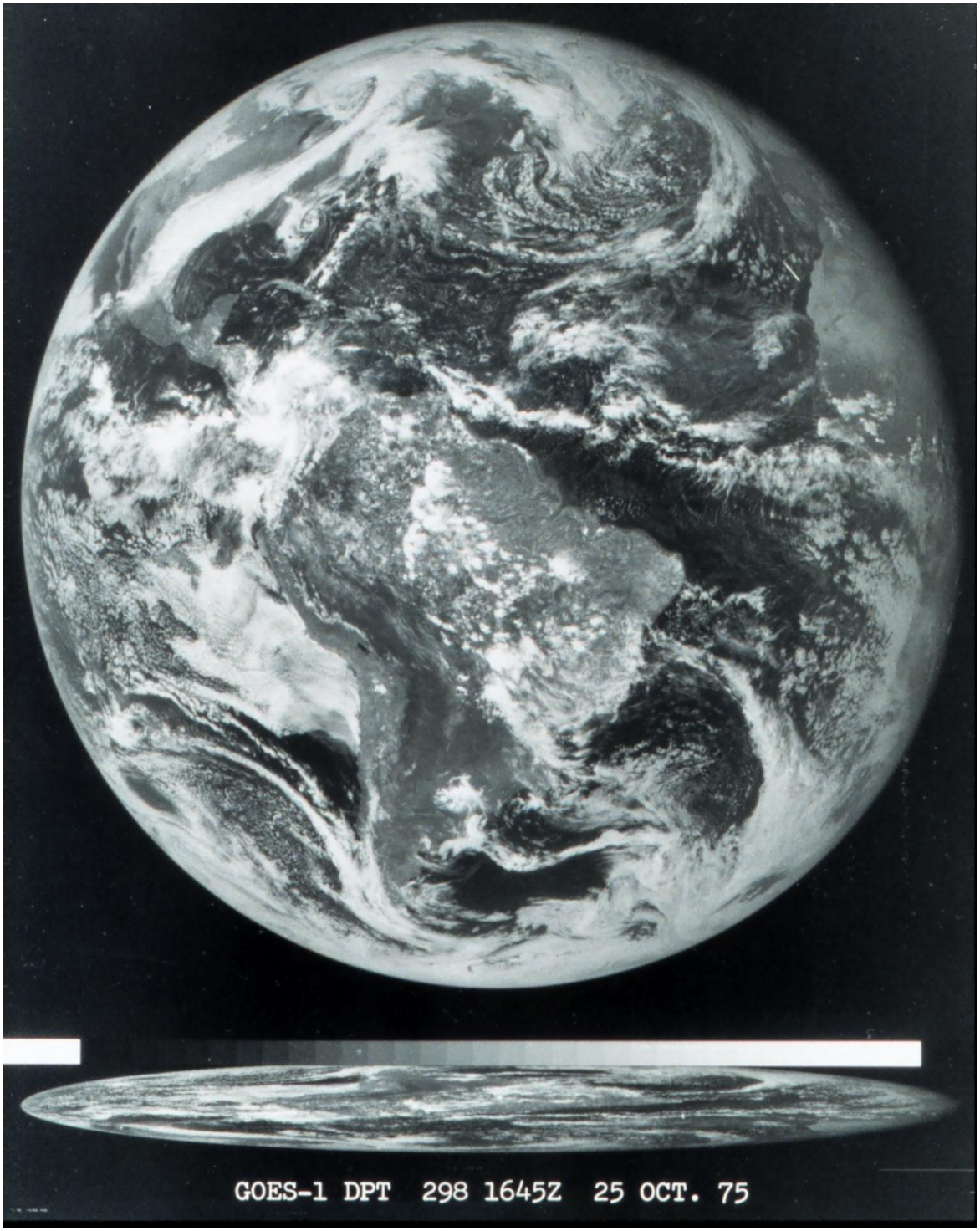

Image credit: National Oceanic and Atmospheric Administration, of the first image ever obtained from a GOES satellite. This image was taken from over 22,000 miles (35,000 km) above the Earth's surface on October 25, 1975.