

THE STAR DIAGONAL

THE JOURNAL OF THE OGDEN ASTRONOMICAL SOCIETY



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Meeting Announcement

The monthly meeting of the Ogden Astronomical Society will be held on November 12th at 7:30 in the Ott Planetarium at Weber State University

President's Message

For our meeting this month we have Dr. Stacy Palin speaking. Her topic will be what's going on with the new Science Building, and if we have time we will talk about the proposal Dr. John Sohl made about OAS taking their 25 inch telescope on a long term loan basis.

Thanks to Craig Browne and David Rady for taking time to attend the North Fork Park accreditation celebration at Weber State University last month. In spite of all the speeches it was a fitting celebration of a really unique accomplishment. Now we have an ADA recognized park close to and urban area. Part of our ongoing participation in this effort will be to have Star Parties at North Fork Park. I hope

we can count on club members for support of this effort.

With the weather turning cold we don't have any club activities scheduled until the first weekend of March, which will be the annual trip to St. George. This is a great chance to get out of the cold and do a little stargazing. We will get the Executive Committee together in early January to plan next year's activities, if you have any suggestions let us know.

Thanks,
Lee Priest

OAS Minutes – November 2015

The annual meeting of the Ogden Astronomical Society was held on November 8, 2015 at 7:30pm at the Ott Planetarium. President Lee Priest conducted the meeting.

Announcements

- Dues are Due and Calendars are available. See Doug Say.
- 10/9 – Snowbasin. Meet at the lift at 5pm. Meal vouchers will be provided.
- 10/17 – Last Antelope Island for the year. Solar viewing begins at 5pm
- 3/4 – 3/5 – St. George.
- Let will be ordering about 10 Year in Space calendars.
- Ron Vanderhule announced things for sale.
 - Meade Deep Sky 10/Equatorial Mount
 - 4” Unitron
 - Deep Sky Filter
 - Star Catalogs
 - Giant Star Atlas
 - How to Make a User Friendly Telescope by John L. Dobson
 - Misc Eyepieces

The Program was “Exoplanets” by Dr. Charles Beichman. It celebrated 20 years since the discovery of the first exoplanet. Nightsky Network <http://nightsky.jpl.nasa.gov/>

Meeting adjourned and several of us went to Village Inn in South Ogden for desert or dinner.

Star Parties

Public

Requested

Private

- 3/4-3/5 – St. George

Serendipitous Lunar Occultation

On Friday October 16th I had planned on having some neighbors over to let them look through the telescope I have in my observatory. It turned out they were given tickets to the USU/Boise State

football game so I told them to go to the game and we would get together another time. This meant I had some time to relax and look at some fun stuff through the telescope. There was a waxing crescent moon that night so I decided to take a look at it after I had a look at Saturn.

When I put the telescope on the moon I was surprised to see that it was just a few minutes away from occulting a fairly bright star. It was very easy to see the earthshine on the dark limb of the moon so I had a really good idea of how close they were. After observing for about five minutes I was treated to the “blink” of the light from the star instantly disappearing. The moon travels eastward about one lunar diameter every 50 minutes.

It brought back memories of a grazing lunar occultation of Regulus that I had observed with OAS and SLAS members about ten years ago. In that case I saw the light of the star disappear then reappear and then disappear several times. It was a lot of fun.

I later went back and checked using the free planetarium program Cartes du Ciel (Sky Charts) and it appears that I saw an occultation of the magnitude 7.2 star HD148198 (RA 7h33.0m, Dec -17°46'). I sometimes forget that over the course of nearly any night (when it is observable) the moon will occult a number of stars. Some of these are fairly bright.

If you've never observed an occultation before, you should try – they are very fun to observe. When the moon is in a waxing crescent phase it is fairly easy to see stars disappear as they pass behind the dark side of the moon. So, the dark side of the moon isn't just interesting for Pink Floyd fans.

Clear skies,
Dale.

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How we know Mars has liquid water on its surface

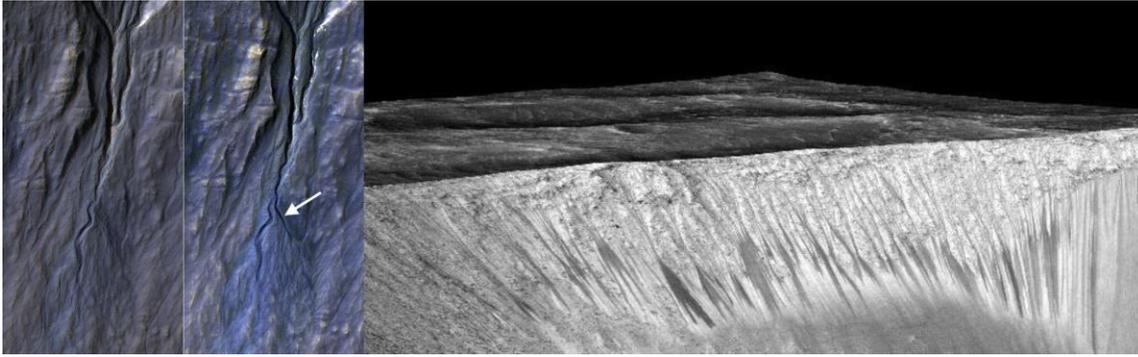
by Ethan Siegel

Of all the planets in the solar system other than our own, Mars is the one place with the most Earth-like past. Geological features on the surface such as dried up riverbeds, sedimentary patterns, mineral spherules nicknamed "blueberries," and evidence of liquid-based erosion all tell the same story: that of a wet, watery past. But although we've found plenty of evidence for molecular water on Mars in the solid (ice) and gaseous (vapor) states, including in icecaps, clouds and subsurface ices exposed (and sublimated) by digging, that in no way meant there'd be water in its liquid phase today.

Sure, water flowed on the surface of Mars during the first billion years of the solar system, perhaps producing an ocean a mile deep, though the ocean presence is still much debated. Given that life on Earth took hold well within that time, it's conceivable that Mars was once a rich, living planet as well. But unlike Earth, Mars is small: small enough that its interior cooled and lost its protective magnetic field, enabling the sun's solar wind to strip its atmosphere away. Without a significant atmosphere, the liquid phase of water became a virtual impossibility, and Mars became the arid world we know it to be today.

But certain ions—potassium, calcium, sodium, magnesium, chloride and fluoride, among others—get left behind when the liquid water disappears, leaving a "salt" residue of mineral salts (that may include table salt, sodium chloride) on the surface. While pure liquid water may not persist at standard Martian pressures and temperatures, extremely salty, briny water can indeed stay in a liquid state for extended periods under the conditions on the Red Planet. It's more of a "sandy crust" like you'd experience on the shore when the tide goes out than the flowing waters we're used to in rivers on Earth, but it means that under the right temperature conditions, liquid water does exist on Mars today, at least in small amounts.

The measured presence and concentration of these salts, found in the dark streaks that come and go on steep crater walls, combined with our knowledge of how water behaves under certain physical and chemical conditions and the observations of changing features on the Martian surface supports the idea that this is the action of liquid water. Short of taking a sample and analyzing it in situ on Mars, this is the best current evidence we have for liquid water on our red neighbor. Next up? Finding out if there are any single-celled organisms hardy enough to survive and thrive under those conditions, possibly even native to Mars itself!



Images credit: NASA/JPL-Caltech/Univ. of Arizona, of a newly-formed gully on the Martian surface (L) and of the series of gullies where the salt deposits were found (R).