LAS Meeting April 19th –
Presentation “Meet the Herschels; an evening with Will and Lina” by Vern Raben

Both William and Caroline Herschel were fascinated with astronomy. The dedication, hard work and ingenuity of this amazing brother and sister team enabled them both to became famous professional astronomers in the early 19th century. This presentation is about their lives, their discoveries, and techniques they used to make them.

April Solar System Highlights

**Moon**
Last quarter: April 7th 1:19 am
New moon: April 15th 7:58 pm
First quarter: April 22nd 3:47 pm
Full moon: April 29th 6:59 pm

**Mercury**
Mercury is not visible this month.

**Venus**
Venus is visible in the evening sky in constellation Aries. It moves to constellation Taurus on the 19th. It is magnitude -3.9 and its disk is 11 arc sec across.

**Mars**
Mars is visible in the morning sky in constellation Sagittarius; it increases in brightness from magnitude 0.3 to -0.4. The disk increases in size from 8.5 to 11 arc sec across. Best time to view now (Mar 1) is shortly before 5 am. Mars will be at opposition with Earth on July 27th.
Jupiter

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Jupiter is visible in the morning sky in constellation Libra.

It is about magnitude -2.5 magnitude in brightness. The disc is 44 arc sec across.

The table at the left shows Great Red Spot Mid Transits this month based on longitude of 288° (See [http://jupos.privat.t-online.de/rGrs.htm](http://jupos.privat.t-online.de/rGrs.htm)).

Jupiter is at opposition on May 8th.
**Saturn**
Saturn is visible in the morning sky in the constellation Sagittarius and magnitude 0.4 in brightness. Its disk is 17 arc sec across.

**Uranus**
Uranus is visible in the early evening sky in constellation Pisces only until the 7th. It magnitude 5.9 in brightness and its disk is 3.4 arc sec across. It will reappear in the morning sky after May 7.

**Neptune**
Neptune is very low in the eastern sky in constellation Aquarius; it is magnitude 7.9 and brightness and its disk is 2.2 arc seconds across.

**Comets**

Comet C/2016 R2 (PANSTARRS) is in constellation Perseus early this month. It moves to constellation Auriga on April 16. It is about magnitude 11.6 in apparent brightness as the month begins and dims to 11.8 by months end. The coma is about 2.6 arc min across.
Thursday, March 15th Meeting Minutes
by Joe Hudson, LAS Secretary

1900 hours MDT
2040 Ken Pratt Boulevard
Longmont, Colorado

Vern Raben, President, opens and moderates.

Introductions:

Officers
- Vern Raben - President
- Gary Garzone (not present) - Vice President
- Treasurer and AL Coordinator - Marty Butley
- Joe Hudson - Secretary
- Jim Elkins – Board member
- Tally O’Donnell – Board member
- Brian Kimball – Board member

New members and visitors:
None

Ted (no last name given) old member

Announcements:
- March 16 Fairplay star party (MJ Post)
- March 23 Longmont Rec “Amazing Astronomy” presentation by Bill Tschumy and star party 7:00 to 9:00 pm
- April 19 LAS meeting

Presentation: What’s Hot on the Moon Tonight (or maybe... Is that cherry pie cool yet?)
Author and Presenter Andrew Planck

The Moon gets bad rap, whether as an observing target that is rather bland, nothing more than shades of gray, with the same presentation cycle and face month in and month out. At worst, the Moon is often derided as nothing more than light pollution which prohibits general observing or wideband imaging... and yet, in the estimation of this author, the Moon offers much, much more.

Indeed, Andrew is on a personal mission to show both casual and more disciplined observers that the Moon is a treasure trove of astonishing beauty and complexity, just as
worthy a cold night under the stars as many deep sky objects (and most days of the month offering plenty of illumination for these old eyes)
And we'll get this question out of the way quickly... no, you cannot see the US flag the Apollo astronauts left behind unless your 'Personal Palomar' has a mirror 3 miles in diameter.

This is a small sampling of 'lunatic' facts that Andrew was kind enough to share...

- There are over 10,000 craters visible with a small 3 to 4 inch scope... which increases exponentially as aperture grows
- Volcanoes were once thought to be the source of all craters, but now we know they were created by impacts (meteorites of varying size and velocity at impact).
- Regardless the angle of incident, craters are nicely rounded and not elongated in the direction of the meteorite's original path.
- There are three types of craters... all delineated by size alone but showing additional features as size grow (i.e. central peaks in craters over 10 miles in diameter, terrace formations rimming larger craters, etc)
- Some craters have periphery features mimicking that of a cooled pie crust (an excellent analogy to the geophysical processes involved... that is, where surface features have cooled more quickly that material underneath. As subsurface material cooled and contracted, the lunar surface was no longer supported, and as quite easily seen, resembling a pie whose crust has cooled and settled down onto the fruit underneath... the piecrust is still intact, but cracks along the periphery show where the crust have given way to its own weight.
- The lighter and darker areas we see on the Moon formed during its early molten state: heavier / darker materials (like basalt) sank and lighter materials (in color and weight) rose to the surface and cooled.
- Later periods of heavy bombardment created fissures through which the still molten dark materials rose to the surface, spread and cooled.
- Some central peaks in lunar craters rise to over 18000 feet in vertical height from the lunar surface surrounding - certainly not like Colorado's 14ers that really start at 5000 feet above sea level.

As all disciplined amateurs know, a plan and a log of the executed plan (what did you see?) are hallmarks of observation maturity. Andrew's book, What's Hot on the Moon Tonight, already has the plan created by showing the features best observed on any given day of the month, as well as ample pre-printed log sheets to record your observations by the written word and and areas for sketching.

With Andrew's book, all you need are eyes and clear skies... he has done the rest.
Business Meeting

- Finance Report by Marty Butley
- Library Telescope Program Update
- Norwood Colorado Dark Sky Community Update For more information please contact bldrpost@comcast.net

Messier 63, Sunflower Galaxy, in constellation Canes Venatici. Image credit: Gary Garzone on March 16th. Right Ascension: 13h 16m 38.9s, Declination: +41° 55′ 59″
Navigating the April Night Sky, Northern Hemisphere

For observers in the middle northern latitudes, this chart is suitable for mid April at 10:00 p.m. Daylight Time.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.

The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Navigating the April night sky: Simply start with what you know or with what you can easily find.

1. Extend an imaginary line north from the two stars at the tip of the Big Dipper's bowl. It passes Polaris, the North Star.
2. Draw another imaginary line west across the top two stars of the Dipper's bowl. It strikes Capella low in the northwest.
3. Through the two diagonal stars of the Dipper's bowl, draw a line pointing to the twin stars of Castor and Pollux in Gemini.
4. Look in the west-southwest for the bright Winter Triangle stars of Sirius, Procyon, and Betelgeuse.
5. Directly below the Dipper's bowl reclines the constellation Leo with its primary star, Regulus.
6. Follow the arc of the Dipper's handle. It first intersects Arcturus, then continues to Spica.
7. Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.

Binocular Highlights:
A: M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux.
B: Look nearly overhead for the loose star cluster of Coma Berenices.
C: In the Big Dipper's handle shines Mizar next to a dimmer star, Alcor.

Relative sizes and distances in the sky can be deceiving. For instance, 360° “full moon” can be placed side by side, extending from horizon to horizon.

Relative size of the full moon.
Milky Way from Orion to Cassiopeia in H-Alpha by David Elmore

On March 10
Messier 42, the Orion Nebula, HDR image by MJ Post on March 24.
Venus and Mercury conjunction by Brian Kimball on March 10