

# AUTORA



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The Royal Astronomical Society of Canada - Windsor Centre

September 2012

## The Next Small Step by Matthew McCall

Apollo 11 Commander Neil A. Armstrong passed away on August 25 after complications from heart surgery. He had his 82<sup>nd</sup> birthday earlier that month but even though the first moon landing in 1969 was years before my time I am still surprised how many years have passed and men still haven't returned to the Moon since the last American missions. He shared this sentiment, though rarely spoke publicly, Armstrong remained reclusive his whole life; but one wonders when the humble man's small steps on another world – and those of the other moonwalkers, will be followed in the future.

At the time of this being written on August 31, a private memorial service for Neil Armstrong has concluded with a national memorial having been planned for September 12 in Washington. Though the public has been largely distracted by events in the news, I can't help but think if his death and memorial service may yet result in some kind of small shift in the way people think of space and exploration of it, even if hardly perceptible now. It sounds like wishful nostalgia but I've already witnessed a surprising reaction coming even from my generation when I say to them that the first man to walk on the Moon is gone.

Though most everyone has heard of his passing by now there simply seems to be this certain thought still on particular people's minds when they happen to notice the Moon shining above them at night. I've noticed the odd question or two about the Apollo landings when I mention him and friends and colleagues seem to express interest in looking through a telescope lately, especially at the Sea of Tranquility on the lunar surface. Maybe it's just me – literally, just me talking about what went on up there that's making them look up, but I'm just interested in seeing someone make another footprint on the Moon again. How long do we have to wait for the next small step? We'll see...



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## Calendar of Events

### *Our next meeting...*

Tuesday October 16, 2012

7:30 p.m.

at

Ojibway Park Nature Centre

5200 Matchette Road

### *Main Speaker...*

TBD

### *Topic...*

"TBD"

### *Activities...*

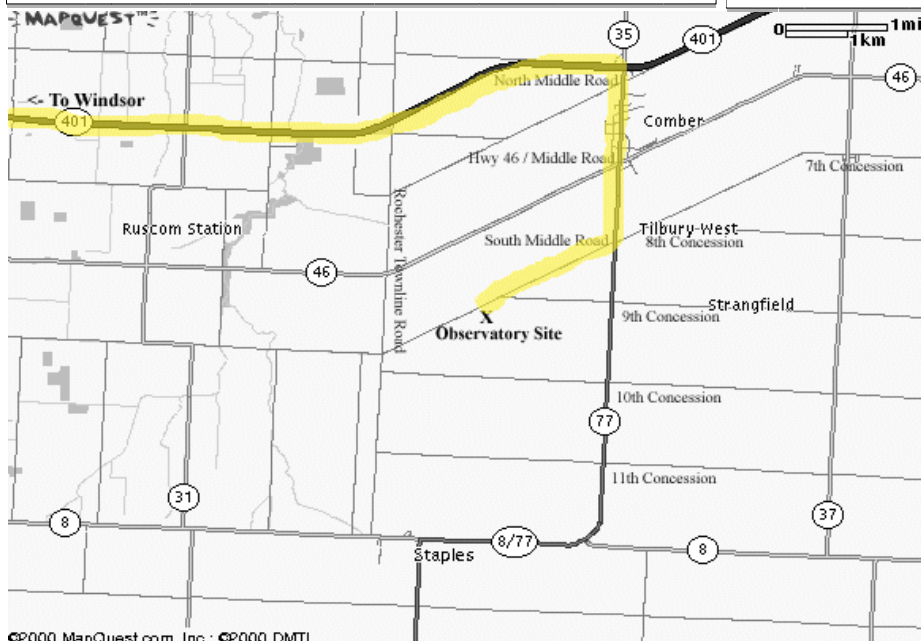
**Open House Night at Hallam:** The next open house night at Hallam is on Saturday September 22 at 8:00 p.m..

**Pallas** is at opposition on September 24 and is 10 degrees below Uranus in the constellation Cetus.

**Uranus** will be 1 arc minute from 5.8 magnitude 44 Piscium on Saturday September 22.

**Venus** passes 1/4 degree from Regulus in the morning on October 3.

**Council Meeting:** The next meeting of Council will take place on Tuesday October 9 at 7:30 p.m..



### Hallam Observatory Site

**Directions:** The map at left shows the Comber area and it includes the major highways (401, 77, 8 and 46) that are in the area of the observatory.

The most direct route from Windsor is "highlighted" on the map which is to take Highway 401 East to Highway 77 South to South Middle Road. Turn right onto South Middle Road and go about 1 kilometer and just after the point where Concession 9 joins it (it is hard to see this intersection) you will find the observatory site on the South side (left) of the road. 3989 South Middle Road.

If you hit the Rochester Townline Road (you come to a stop sign) you have gone too far.

## Submissions

Aurora is published monthly except for July, August and December. The September, October, January, March and May issues are full newsletters (usually 6 pages) with a number of member submitted articles. The November, February, April and June issues are short flyers (2 pages).

Submitted articles can be of any length from a paragraph to multiple pages. I can scan pictures and/or diagrams (both prints and film) to support your article and the originals will be returned to you.

Submission deadline is the 1st of the month.

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## Membership

The Windsor Centre of The Royal Astronomical Society of Canada meets on the 3rd Tuesday of every month (except July and August) at the Ojibway Park Nature Centre. In addition to regular meetings the centre hosts a number of observing nights, a picnic and a December social. Members receive a copy of the Observer's Handbook, a subscription to SkyNews magazine and access to the Centre's library and telescopes. Optionally the RASC Journal is available in print form—online version free.

Annual Membership Fees: Please see the RASC website at [www.rasc.ca](http://www.rasc.ca) for current rates.

Contact Greg Mockler at (519) 326-7255 or visit our website at <http://www.rascwindsor.com> for more information.

## June 2012 Meeting Minutes by Art Rae

The monthly meeting of The Royal Astronomical Society of Canada - Windsor Centre was held at the Ojibway Park Nature Centre on June 19, 2012.

Windsor Centre **President Paul Pratt** chaired the Meeting. Paul called the meeting to order at 7:33 p.m. and welcomed members and guests to the Ojibway Nature Centre.

Paul asked members to review the minutes from the last meeting and requested a **motion to accept the minutes**. Pierre Boulos made the motion, Al DesRosiers seconded and it carried.

Paul provided **announcements of events** including:

- Wagner Orchards event being planned for September 2013
- Notice of upcoming Science City meeting.
- Need volunteer for upcoming Pt. Pelee Robert Bateman Art Camp Aug 20-25 night sky program. Steve Pellarin and Susan Sawyer-Beaulieu volunteered.
- Also need volunteers to assist Pt. Pelee staff on alternate Dark Sky Nights.

Programs for this Meeting tonight include:

Pierre Boulos: History's Famous Astronomers of the Centuries

Juliana Grigorescu: Astrolabe

Tom Sobocan: Photo essay of the year at Windsor Centre

Matt McCall: The monthly sky report

Paul introduced the **first speaker** for the meeting, **Pierre Boulos: Famous Astronomers In History or Name That Astronomer**. Pierre engaged the audience through his choices of famous astronomers over the ages from 624 BCE up to the 19th century including his rationale for the choices, at the same time letting them guess who might be on his list.

Starting with the Common Era he included Thales, Anaximander, Pythagorus, Aristarchus, Atistotle and Hipparchus. After the Common Era was Claudius Ptolemy who used Hipparchus' observations to develop the model to predict movements of the Sun, Moon, planets and stars.

In the Dark Ages records disappear. But exceptions include al Kharizimi, the inventor of algebra, calculated positions on Earth and mapped positions of cities. Omar Khayyam compiled astro tables, reformed the calendar. Nicolas Copernicus reasoned the heliocentric universe instead of earth-centered one. Astronomers such as Brahe and Galileo helped prove his model more accurate.

An honorable mention goes to Tycho Brahe who built the most accurate observatory to date. Number one of the 17th century goes to Jeremiah Horrocks (1618-1641) who was the first to show the Moon moved in an elliptical path, comets followed elliptical orbits, accounted for tides and made a helioscope to observe the transit of Venus in 1639.

18th century monuments include honorable mentions such as Messier, Bode: who's law predicted the distance of planets from the Sun, Clairant: proving Newton's theory and predicting the

second observed arrival of Halley's Comet, and Euler for solving the effect of Saturn on Jupiter.

Pierre left alone the choice of famous astronomers of the 20th century.

Paul thanked Pierre for his presentation then called for the **Break**.

After the Break Chair Paul Pratt reminded the membership of the new **Windsor Centre Facebook page**.

The **50:50 draw** was held. The winner, John Huschilt, kindly donated back to the Centre.

Paul then introduced the **second speaker** of the meeting, **Tom Sobocan: A Slide Show of the Windsor Centre Year's Events**. Tom's show included images of winery tour participants, the September 20, 2011 Membership Meeting, members at the Venus Transit on Windsor's riverfront and the Annual Picnic of June 16, 2012.

Paul then introduced the **third speaker** of the meeting, **Juliana Grigorescu: Using a Sextant to Measure the Coordinates of a Location**. Juliana demonstrated the theory and practice of using a Mark 3 Sextant. The instrument mechanics were explained using the sextant followed by calibration technique including vertical and horizontal alignment, calculating the Sun position and corrections to get latitude. Other factors were the Index Correction of +/- 6 arc minutes and height of eye correcting for 2 arc minutes.

To find longitude requires the equation of time due to the non-constant speed of the Sun in it's orbit and the difference in time calculations between Mean Sun and True Sun.

Next, a demonstration of the calculation of longitude showed that because the Sun moves across the sky at 15 minutes of arc for one minute of time it can be calculated by observing what time the Sun crosses the local meridian at local noon referencing to a GMT timepiece then calculating what time the Sun would have crossed the Greenwich meridian to find the local longitude. Corrections for the calculation of latitude include solar semi-diameter of the lower limb, altitude of the observer (height of eye) and declination of the Sun on the date of observation.

**Director of Observing Report: Matt McCall.** Matt first covered the just passed June 5th Venus Transit event using images from the Windsor Centre Astrophoto Group including those of Steve Pellarin, Randy Groundwater, Susan Sawyer-Beaulieu and Paul Pratt.

Following was shown a video of the recent launching of the first Chinese space vehicle, Tiangong 1.

For viewing this summer Matt's list referred to:

- Epsilon Lyrae 1 & 2
- Struve 2470 & 2474 referred to the "other double" in

(Continued on page 5)

## Hallam Happenings by Dave Panton

Summer was great at Hallam Observatory. The transit of Venus was observed and through the month of June several successful photo imaging sessions were held as well as many visual observation nights in clear conditions. The Sun was a wonderful day-time imaging target with some large storms cruising across the face, their development witnessed and at times photographed.

Our Annual June picnic was well attended in nice clear skies. Attendees were able to witness Fraunhofer lines in Sun light first hand in a spectrograph brought to the site for this special event. They were also able to directly observe the Sun's boiling surface texture in a Hydrogen Alpha telescope brought by Steve Pellarin.

In the observatory, Steve Mastellotto removed the manual focuser from his AT111 refractor and installed an electrically actuated focuser that can be both manually operated in the dome or remotely from the computer in the warm room. There were some complications requiring a new mount for the autoguider to be machined and installed in a more secure and convenient location.

The mechanical installation went well and both the AT111 and autoguider work perfectly. The software installation for remote focusing did not and still requires some more attention. The important part of all this is the whole operation (other than this minor glitch) has worked perfectly all Summer. Pointing is excellent as is tracking and autoguiding for astroimaging.

Matt McCall reported a mysterious high pitched squealing sound in the warm room. Entering wearing ear protectors we went in and found the source was the old backup power pack for the computer. The lead acid battery had reached the end of its useful life and the sound was a signal as to its status. The whole thing was scrapped as the battery replacement cost exceeded a new unit. A simple surge protected power bar with a short cord will do the job instead. Does anyone have one surplus for Hallam?

June, July and August public open houses were well attended with July perhaps setting a record. As many as 50 people showed up through the evening and all appeared to enjoy the event. A few stayed to near midnight! We frequently host repeat visitors on open house nights. There are always questions about who operates the observatory, how it came to be and admiration for the whole facility.

A new fairly short "slide show" has been prepared for these events and can be projected from our ceiling mount digital projector on the big screen on the North wall of the warm room. It has proven popular as guests ponder shots of a mysterious UFO,

photos of this years Sunspots, the transit of Venus and the ever mysterious Bahtinov camera focus mask that is so vital in capturing great astroimages. The show can be run from the warm room computer while it simultaneously controls the telescope for visitors in the dome.

A special event was held for Moe Trepanier, the owner of the farm where our observatory is located. Moe invited family and friends to the affair held the night before the August open house. All from children to seniors liked the event. Saturn, a bit low on the Western horizon was a hit as was the Moon, conveniently located far enough away to avoid spoiling the view of Saturn.

In July a bright new light on the Eastern horizon appeared spoiling the view from the southern two thirds of the deck. It is hidden by Moe's machinery building from the North third. Very polite initial contact with the lady home/farm owner on highway 77 was less than productive. Quote: "If you don't like my light,

move your observatory". Further contact was made via a third party and it seems she might agree to modifying the light if we paid her electrical contractor to do so and if it will still fully light her yard. Some further investigation indicated the prospect of reducing the light intensity facing us does not look possible.

The home to our immediate East on county road 309 now sports two new mercury vapour lights on the back wall and porch. These are fortunately blocked by Moe's building until one ventures further south than about ten feet from our deck. Across the

road the appearance of a small brightly lit "green house" was noted one night by Pete Barbaro but so far has not been seen since by day or night. If these sort of intrusions become a part of the scene at Hallam we may face the cost of hiding ourselves behind costly fencing as done at auto recycling yards.

All is well outside the observatory. Al DesRosiers has been keeping the grass cut around the observatory and over by the pines as well. This area has unfortunately also been affected by an existing source of light pollution from a sodium vapour light on farm East of us on the South Middle Road. It was previously blocked by the old corn crib, since collapsed and removed. Ray Drouillard planted and cared for a row of pines anticipating this event some years back. They are still small and a couple have expired from a hot dry summer.

Moe, with his big mower keeps the large area cut and the whole facility looks good from the road and from our deck. The area formerly covered by hundreds of dead ash trees is now planted in soybeans giving us a nice green Southern scene over the Summer.



*Autoguider (finderscope with blue camera) in its' new location*

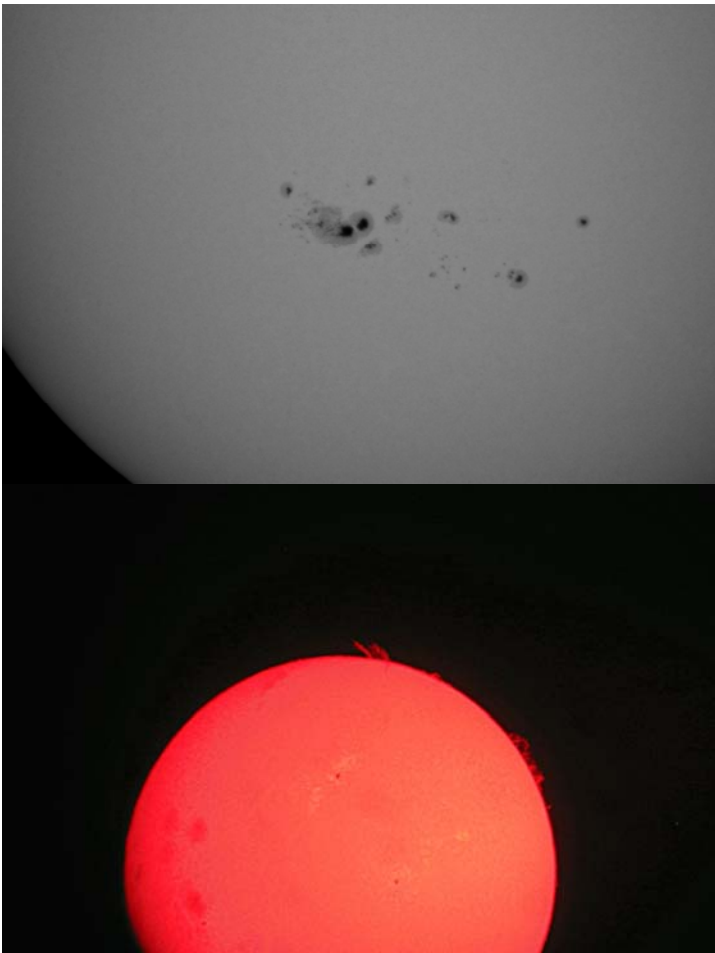


## June Meeting Minutes continued from page 3

- Lyra, located east of the parallelogram
- Pluto to be at opposition June 29th in Sagittarius
- M8 Lagoon Nebula and M21 in Sagittarius
- M8, M20, M21 and M17
- Virgo cluster
- The July 9 early morning conjunction of Venus  $0.9^\circ$  north of Aldebaran
- Double shadow transits on Jupiter August 6th at 4:04 a.m.
- The Perseid meteor Shower peaking on the night of August 11-12
- A Venus daylight occultation by the Moon on August 13 at 4:37-5:21 p.m.
- And the moon, Mars, Saturn and Spica conjunction ( $4^\circ$ ) of August 21st.

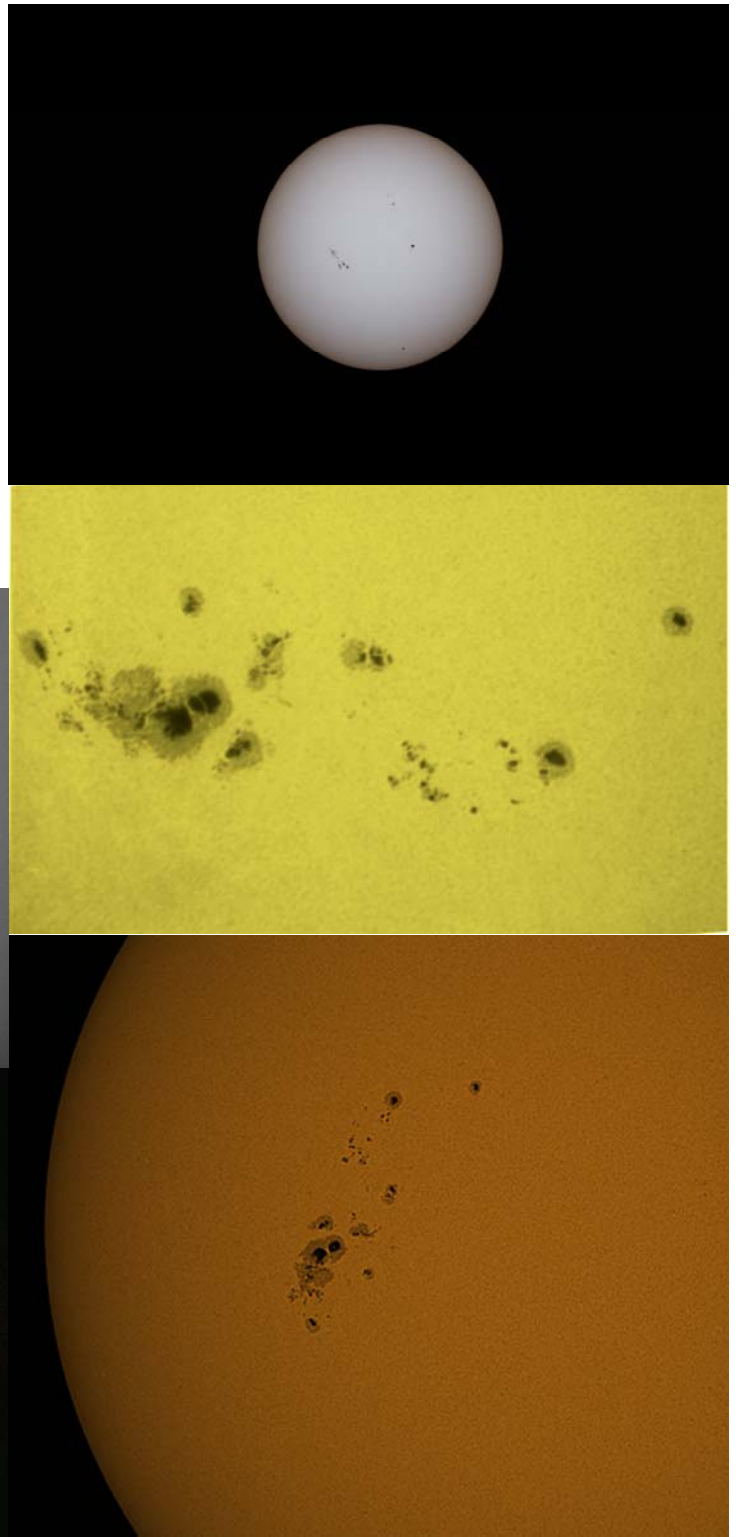
Chair Paul Pratt, after thanking presenters Pierre Boulos, Tom Sobocan, Juliana Grigorescu and Matt McCall, members and guests for their attending, reminded them to visit the Hallam Observatory monthly Open House and the September meeting, adjourned the meeting.

The meeting was adjourned at 10:15pm.



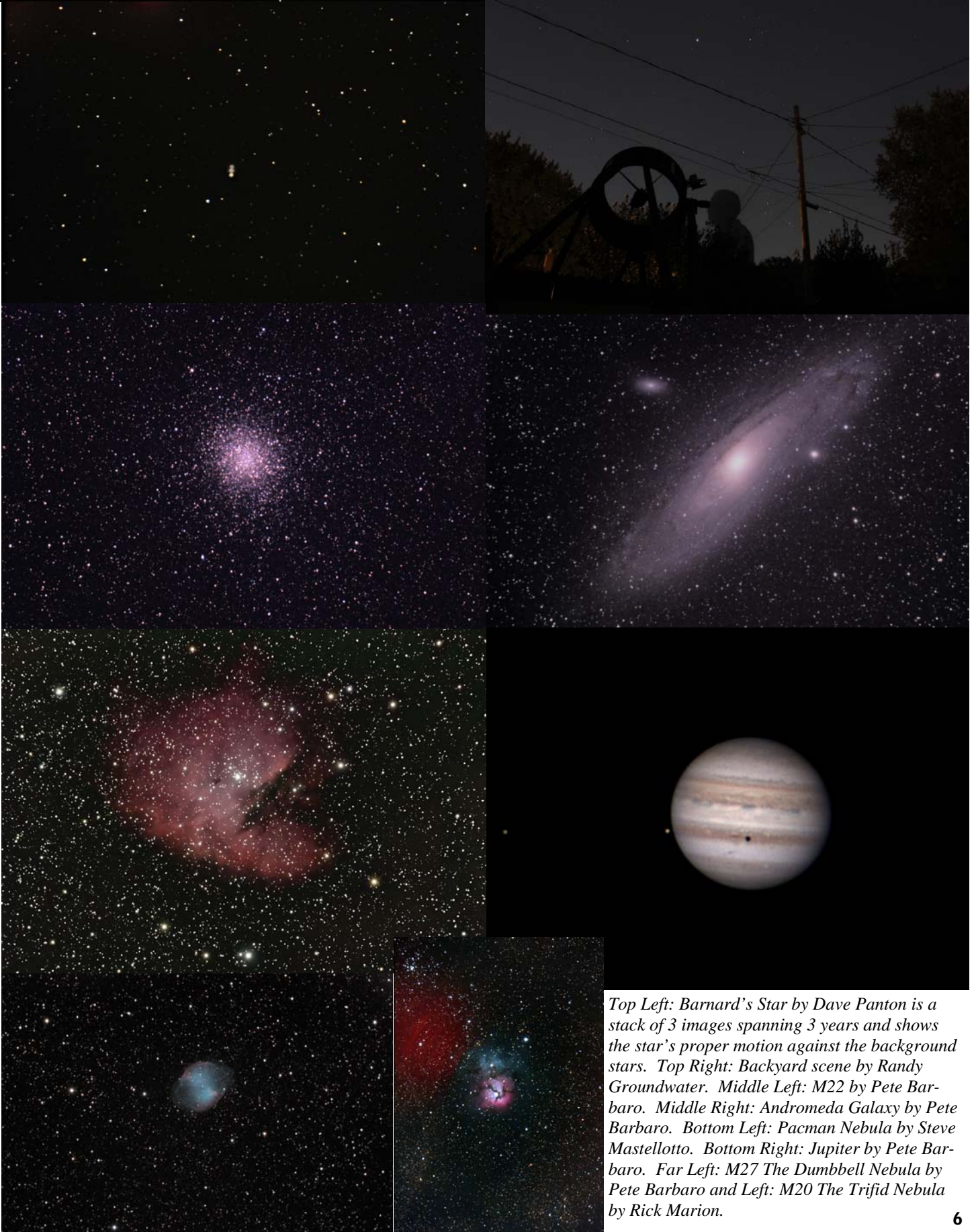
## Calendars

Our Treasurer, Greg Mockler is taking orders for the 2013 Calendar. Price will be \$17.50 including S&H and HST if gets over 10 orders. Please see Greg at the September meeting.



*The Sun was very active this Summer and members all had their own take on active region 1520 that crossed the Sun's disk in early/mid-July. Top Right: Randy Groundwater, Middle Left: Dave Panton, Middle Right Pete Barbaro, Bottom Left: Brian Thomas captured some prominences in H-alpha and Bottom Right: Steve Mastellotto.*

## Member Astrophotos



*Top Left: Barnard's Star by Dave Panton is a stack of 3 images spanning 3 years and shows the star's proper motion against the background stars. Top Right: Backyard scene by Randy Groundwater. Middle Left: M22 by Pete Barbaro. Middle Right: Andromeda Galaxy by Pete Barbaro. Bottom Left: Pacman Nebula by Steve Mastellotto. Bottom Right: Jupiter by Pete Barbaro. Far Left: M27 The Dumbbell Nebula by Pete Barbaro and Left: M20 The Trifid Nebula by Rick Marion.*