

\* CAS \*

# Charlottesville Astronomical Society



March 2014



Welcome New Member(s)

Nathan, Christa, Zack  
and Asher Bowden

Bill Walters

&

GUESTS



# Tonight's Speaker

**Steve Conard**



**Building the New Horizons LORRI  
Imager: A 20 cm Ritchey-Chretien for  
Pluto**

# Club Business

- Dues are DUE – See Ed Tonight!
- 74 members (dues paid)
- Checking account and Cash on Hand: \$3,562.35
- See Ed Preston for information on discounted subscriptions to Astronomy and Sky and Telescope



# Donated to Club

- Former Club President Ken Harker has donated a 10" Astrola Newtonian to the club which will be re-furbished and donated locally.
- UVA not interested so it will be offered to Ivy Creek Natural Area



# Club Scopes

- Club Scopes available for use by members <http://cvilleastro.com/club-telescopes-available-for-club-member-use/>
  - See Rich for information [richard@drummdigital.com](mailto:richard@drummdigital.com)



# Future Club Events

## Friday, March 21



**PVCC**  
PIEDMONT VIRGINIA  
COMMUNITY COLLEGE  
*Opportunity Across Boundaries*

*Free Admission*

**Family Starry Night**

*Friday, March 21*  
8:15 - 10 p.m.  
Piedmont Virginia Community College  
501 College Drive, Charlottesville  
North Mall Meeting Room, Main Building

*Guest Speaker*  
Edward M. Murphy, Ph.D.  
Astronomy Department, University of Virginia

*Join Us for a Chance to Win*  
A Celestron AstroMaster 76EQ Telescope  
Open to PVCC Students and Community

IN CASE OF INCLEMENT WEATHER THE EVENT WILL BE CANCELED

For more info contact:  
MAT@PVCC.edu · YGoddard@PVCC.edu

**CAS**  
Charlottesville Astronomical Society

**UNIVERSITY OF VIRGINIA**  
University of Virginia, Astronomy Department

**SVA**  
PVCC Chapter of SVA

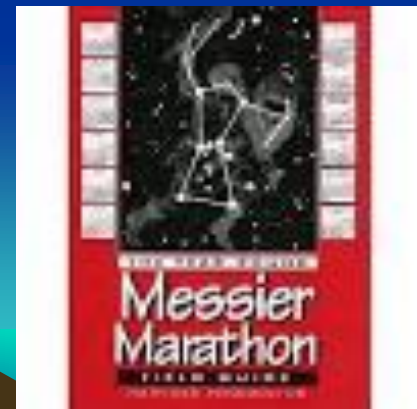
# Future Club Events

March 29/30

## Messier Marathon

Fan Mountain Observatory

Rain / Clouds Cancel





# Future Club Events

Friday, April 4

Ivy Creek Star Party

7:00 – 10:00

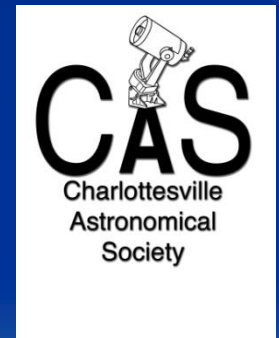


# Future Club Events

Friday, April 25

Fan Mountain Open House

7:00 – 10:00





## **Outreach Awards**

John Avellone

Rich Drumm

Chris Nichols

Bill Phillips

Ed Preston

Fritz Repich

Larry Saunders



# Astronomical League Awards

Have you participated in any of the following?

- Fall Fan Mountain
- Hollymead Star Party
- Ivy Creek
- Rockfish Valley Star Gaze
- Open Doors session
- McCormick Group Nights

If so.....



# Astronomical League Awards

The Astronomical League  
Outreach Award



Some of you are getting close.....

# Astronomical League Awards

## Lunar Observing Award

- \* observe 100 objects on the moon

- \* log your observations



- \*

<http://www.astroleague.org/al/obsclubs/lunar/lunar2.html>



# Library Project

The Library is READY!

Check it out before you  
leave tonight! Follow the  
Signs

# Upcoming Speakers

April

Teaching Astronomy at the High School Level  
Jamie Bourland, Blue Ridge School





# Upcoming Speakers

May

Working on Dark Sky Program

or

NRAO guest



# Upcoming Speakers

June

Sunday, June 1

2:00 pm

James Madison University



Member of the Month

Buried in the snow.....

Will return – next month



# April's Speaker

- **Senior High Astronomy, Reaching for the Stars?**
- At The Blue Ridge School near Charlottesville I have been fortunate enough to teach Astronomy to 11th and 12th grade students for the last 10 years. I'll speak about how I came to be at Blue Ridge, the curriculum I teach, as well as some of the many challenges students and educators face in the 21st century.



Jamie Bourland

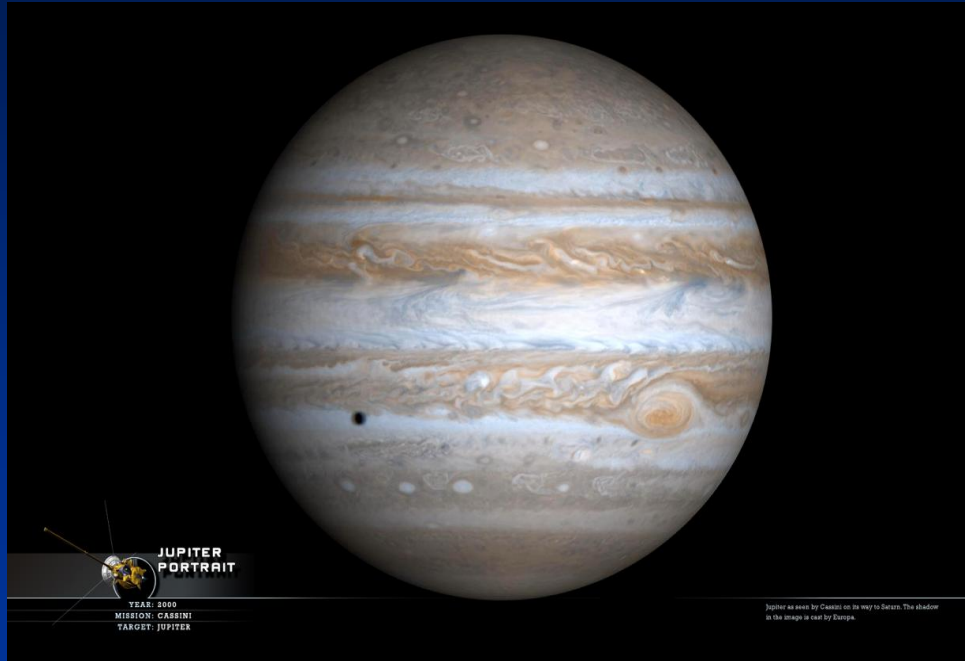
# My Favorite Object

Jupiter and the Galilean moons

Charles Murphy



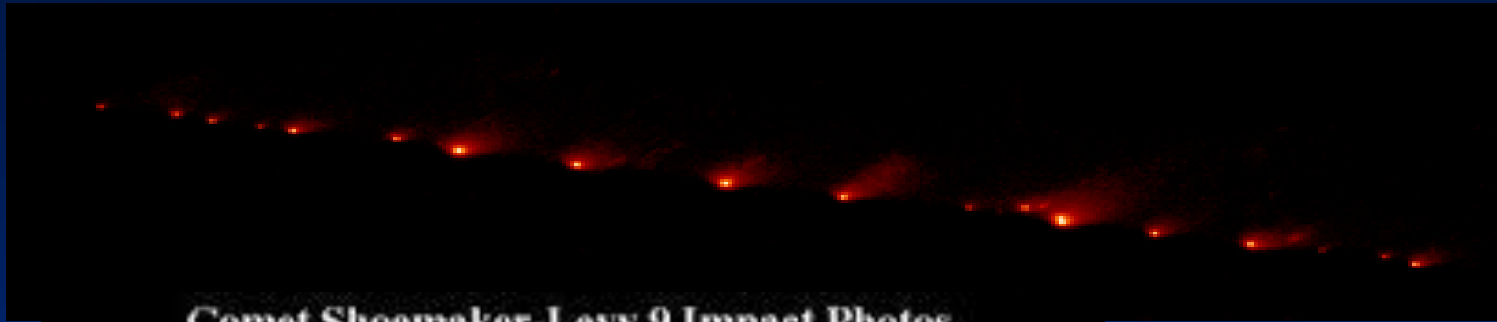
# Jupiter and the Galilean moons



Jupiter, as imaged by Cassini during flyby in 2000

- Tale of the Tape
- Distance: 5.2 AU
- Diameter: ~89,000 miles at equator
- ~11 times Earth diameter
- Axial rotation (sidereal): ~10 hours
- Mass (Earth=1): 317
- Volume (Earth=1): 1,321
- NOTE: All other planets in Solar System can fill Jupiter with some room to spare
- Number of satellites: 67 known (includes the four Galilean moons)





### Comet Shoemaker-Levy 9 Impact Photos

Photo CD Images - 14" Schmidt Cassegrain  
Texas A&M Observatory

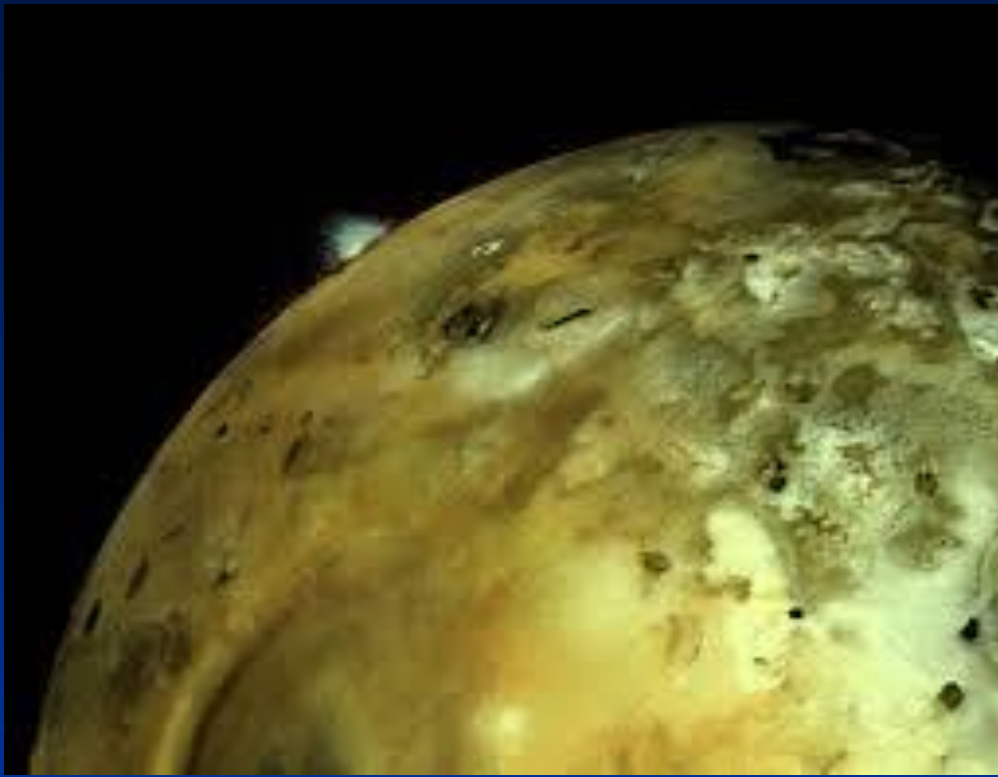


- Comet Shoemaker-Levy 9
- July 1994

More than 20 fragments from comet impacted

Impact occurred on hemisphere facing away from Earth

“All hands on deck” to observe the impact

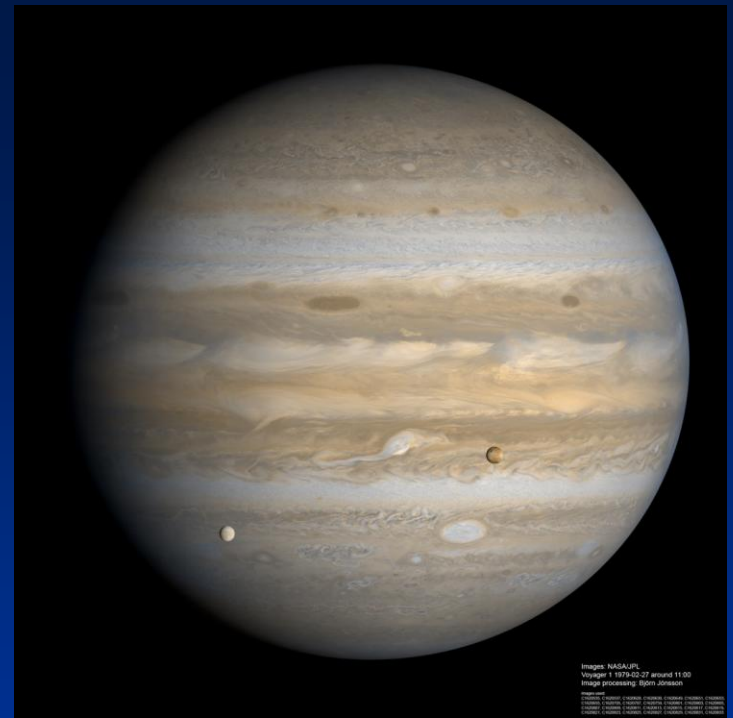


- Image obtained by Voyager 1 on 4 March 1979

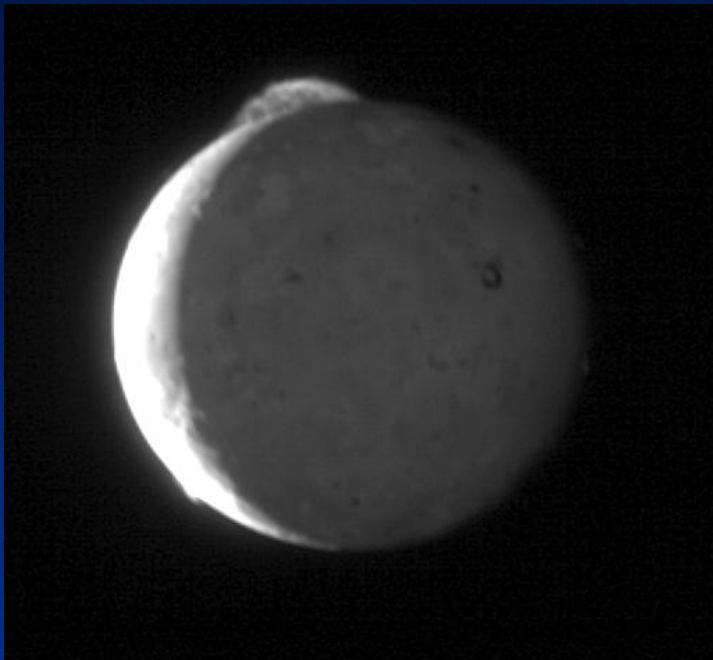
First images of Io were not analyzed until a few days after the flyby

Initially thought to be an image of another Jovian object/moon obscured by Io

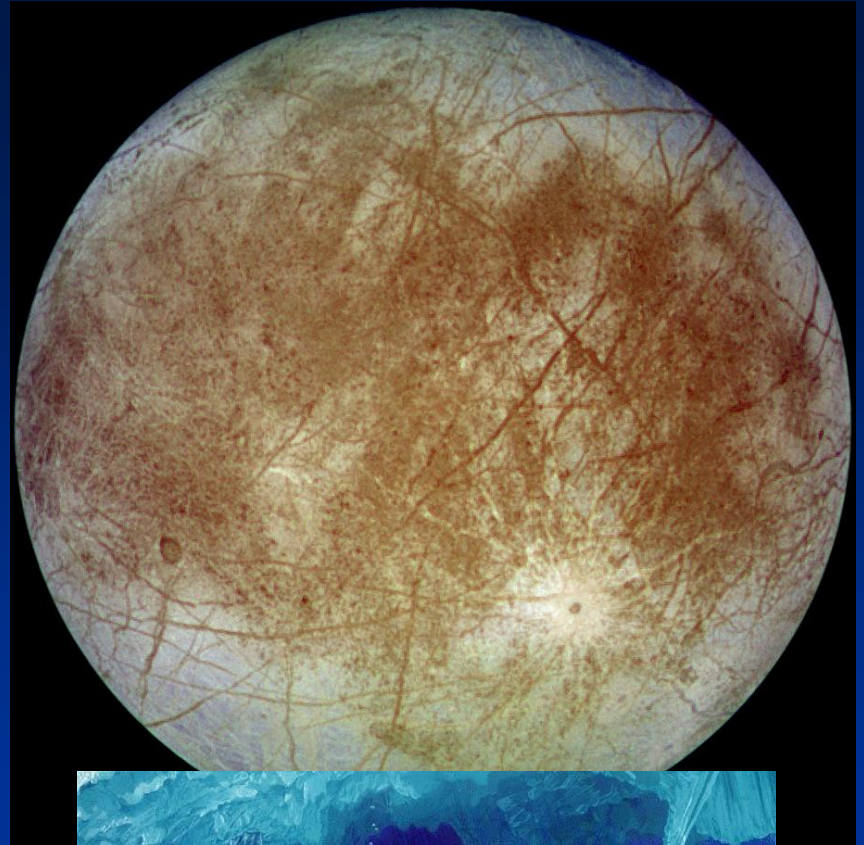
Volcanic activity a result of the gravitational “tugs” from Jupiter and nearby moons - friction causing internal heat







- Image from New Horizon spacecraft of Io's volcano Tvashtar sending material 200 miles above its surface



Sending a “thinking hydrobot” to  
Europa



- May be an unimpressive image to some, but can wow and inspire others to learn more

# CAS Astro-OP Activity/Status ~ 2/4/14 – 3/3/14

- **Activities/Events/Meetings**

- 2/19/14 Locust Grove Middle School Astronomy Club, Ms. Dara Clark and Ms. Susan Midland, approximately 15 students: Steve Layman and Ed Preston
  - Presentation: Telescopes 101 – Steve
- 2/5/14 – 3/4/14 - Coordinated upcoming CAS Astro-OP activities and events for the March – April 2014 timeframe: Steve, Ed, Fritz
- 2/22/14 – CAS Booth and Solar Observing at KidVention, Discovery Museum on the Downtown Charlottesville Mall
- 2/22/14 – The Blue Ridge School Star Party – cancelled due to cold weather and wet grounds; to be rescheduled for an April-May date



# Upcoming Activities and Events

- The **Fluvanna Middle School Astronomy Club** meets on **March 10<sup>th</sup> and 24<sup>th</sup>** - the 2nd and 4th Monday of each month from approximately 3:15 PM to 5:00 PM. **Larry Landress** and **Mike Hegedus** have volunteered as the CAS Astro-OP Coordinators for Fluvanna County.
- The **Virginia Piedmont Region Science Fair** will be held on Wednesday, March 12<sup>th</sup> at the JPJ Arena. CAS is sponsoring the Physics and Astronomy Category and providing special awards for Astronomy. CAS members, **Steve Layman**, **Bill Phillips**, **Rich Drumm**, **Ed Preston**, and **Fritz Repich** will serve as judges for the event.
- The **Locust Grove Middle School Astronomy Club** (Orange County) meets on the third Wednesday (**March 19, 2014**) of the month from approximately 2:40 PM to 4:00 PM. **Ed Preston** has volunteered as the CAS Astro-OP Coordinator for Orange County.
- **CAS Astro-OP** is currently negotiating with the Jefferson-Madison Regional Library to establish an Astronomy Outreach Roadshow that will rotate among the eight library branches throughout the year. Volunteer speakers and members with telescope/binoculars will be needed to make presentations and night sky observations, respectively.
- **BSA Astronomy and Space Exploration Merit Badge Award Support for UVA/Dr. Ed Murphy, Sat. 4/12/14**
- The **Greene County Primary and Elementary Schools** will be conducting their Spring Science Fair on Friday evening, April 25, 2015 from 6:00 to 8:00 PM. Unfortunately, that is the same night as the UVA Fan Mountain Open House, however, if any CAS member is not planning on attending the Fan Mountain event and would like to either give a presentation or setup their scope for observations – please contact Fritz Repich.
- No activities are currently planned for Madison County Schools in the March and April time frame. Scott Duresky has volunteered as the CAS Astro-OP Coordinator for Madison, and possibly Greene Counties.
- **Rose Wood Village at Hollymead** has requested a speaker for their “Let’s Learn” program on April 28, National Astronomy Day. They would like a presentation on Major Astronomy Discoveries of the Last 20 Years. Fritz Repich will be meeting with Chrystal Plaugher, Activities Coordinator to evaluate their facilities and to coordinate CAS support for this event. Contact Fritz if you are interested in providing support or assistance.
- The **Blue Ridge School, Dyke, VA** will be hosting a **CAS Star Party** at a TBD date in the April – May timeframe. No presentations will be necessary however we need members to setup their telescopes for observing by the students and faculty.
- ***We welcome any support that you are able to provide ~ contact Steve Layman or Fritz Repich for information.***



# Outreach Pix



# CAS Astro-OP Support Needs

- **Astro-OP County School System Coordinators (a/o 3/4/14)**
  - Albemarle/Charlottesville: Steve Layman
  - Fluvanna: Larry Landress, Mike Hegedus
  - Greene: Fritz Repich
  - Madison: Scott Duresky, Leo Lombardi
  - Orange: Ed Preston
  - PVCC: Armand Mottaghi
- **Coordinators Needed:**
  - Albemarle/Charlottesville (1 more), Greene (1 more), Madison (1 more), Orange (1 more)
- **CAS Speakers & Repertoire of Topics (a/o 3/4/14)**
  - Ed Preston – “Finding Things in the Night Sky”, “The Cosmic Distance Ladder”, and the “10-Minute Moon”
  - Steve Layman – “Solar System and Night Sky” , “Telescopes”
  - Fritz Repich – “Our Sun”
- **Topic Speakers Needed:**
  - Black Holes.....(3<sup>rd</sup> - 12<sup>th</sup> Grade Audiences)
  - Night Sky Cosmology .....(3<sup>rd</sup> - 12<sup>th</sup> Grade Outdoor Audiences)
  - History of Astronomy .....(3<sup>rd</sup> – 12<sup>th</sup> Grade Audiences)
  - How to Build A Telescope.....(5<sup>th</sup> - 12<sup>th</sup> Grade Audiences)
  - Moon and Planets.....(K – 5<sup>th</sup> Grade Audiences)
  - Major Astronomy Discoveries (all Audiences, ages 5 and up)
  - Other Topics ????.(all Audiences)
- **An editor is needed for the CAS Astro-OP E-News – see Fritz Repich**
- CAS needs someone to **Create Take-Home Astronomy Exercises** that would be handed out to students at presentations. For example, after a presentation on “Findng Things in the Night Sky”, the handout might be a complete listing , with an actual image, of the Messier objects along with a daily/monthly star map. The object would be to find the appropriate Messier object in the night sky then log its details including a rough sketch of what is seen. We are also open to your thoughts, ideas, and concepts on suitable take-home exercises for students in grades 4 - 12. – **See Fritz or Ed Preston for details.**

# Starry Nights Harrisonburg (1 of 2)

## March 23-29, 2014

- Purpose: Weeklong series of free, public events to increase awareness and the steps needed to eliminate/minimize light pollution (*the overuse and misuse of artificial light at night*)
    - *Light Pollution:*
      - *wastes money and energy,*
      - *endangers human physical, mental, and spiritual health,*
      - *takes a tremendous environmental toll,*
      - *erases the stars from our skies*
    - *And, it's almost entirely unnecessary - we can have responsible lighting that ensures safety and security without light pollution*
  - Pre-Starry Nights Harrisonburg Events
    - Saturday, Feb 22 - STEM Day at the Valley Mall, Light Pollution education & awareness
    - Tuesday, February 25 - local environmental groups meet at the JMU Planetarium to learn more about Light Pollution
    - Monday, March 10 - Starry Nights Harrisonburg website goes live. JMU video available
- 

# Starry Nights Harrisonburg (2 of 2)

## March 23-29, 2014

- **Pre-Event Contests** - Poetry/Essay, Photography, Short Film (Winning films shown at Court Square Theatre on 3/29 and shared world-wide on the International Dark-Sky Association website)
- **Schedule** (Tentative; *Bold indicates possible CAS support/participation*)
  - Sunday, March 23 - Light pollution education/engineering competition at the ExploreMore Museum 1-5pm)
  - Monday, March 24 - “The City Dark,” award-winning documentary on the dangers of light pollution at the Court Square Theatre (plus Panel discussion?) 7:00-9:00 pm.
  - **Star Party. Telescope viewing from the Square. 9:00-10:00 pm.**
  - Tuesday, March 25 “The End of Night: Searching for Natural Darkness in an Age of Artificial Light,” a reading and presentation by author Paul Bogard. JMU Miller Hall 7:00-8:00 pm.
  - **Star Party. Telescope viewing from JMU quad. 8:30-9:00 pm.**
  - Wednesday, March 26 “What Can We Do About Light Pollution and Why Should We?” Public forum/workshop on light pollution solutions Harrisonburg City Hall 7pm
  - Thursday, March 27 “The Campus at Night: Controlling Light Pollution at JMU while saving money and maintaining safety.” Wilson Hall JMU Auditorium, 7:00-9:00 pm. Announce winners of photography & writing contests
  - **Star Party. Telescope viewing from JMU campus. 9:00-10:00 pm**
  - Friday, March 28 Night walks led by Sierra Club, Master Naturalists. Downtown, Purcell Park, etc;
  - **Astrophotography workshops at Reddish Knob/SNP;** Night bike rides led by local bike shops; Other events in downtown Harrisonburg.
  - Saturday, March 29 Film Awards show at Court Square Theatre. 5:00-6:00pm. Earth Hour. JMU campus. 8:00-10:00pm. **Star Party. Observing from JMU’s Astronomy Park. 8:00-10:00 pm**



# Your Pictures Wanted.....

<http://cvilleastro.com/astro-images/>



# What's Up This Month

In the Night Sky

<http://www.jpl.nasa.gov/video/>



# COSMOS – 3.9.14

<http://www.planetary.org/blogs/casey-dreier/2014/0130-neil-degrass-tysons-cosmos-has-a-new-trailer.html>



# Door Prize Drawing

