

Mountaineer Skies

Volume 12, Issue 2

<http://planetarium.wvu.edu/>

April - June, 2012

April 15 - Saturn at Opposition. The planet will be at its closest approach to Earth on this date. As the face of Saturn will be fully illuminated by the Sun, this is an excellent time to see and photograph Saturn, as well as its major moons. Unfortunately a telescope will be required.

During the night of **April 21/22**, the **Lyrids Meteor Shower** will be at its maximum. This shower will radiate from near the bright star **Vega** in the constellation of **Lyra, the Harp**. You can expect up to ten incidences per hour. This is not a particularly strong event.

Venus will transit the Sun on Tuesday, **June 5**. This means that Venus will pass in front of the Sun as seen from Earth. A relatively infrequent occurrence, the next one will be in 2117, about 105 years hence.

The **Summer Solstice**, the longest day of the year, will occur on **June 20**.

On **June 30**, the atomic time keepers of the world will **add a leap second** to their clocks to better harmonize with the Earth's rotation. Very few of us will notice the difference.

In The Sky This Quarter

Visible Planets in the Night Sky

Beginning of April, 2012

	Const	Rise	Transit	Set	Mag
Sun		07:02	13:23	19:44	-26.8
Mercury	Psc	06:15	12:16	18:12	1.9
Venus	Tau	08:51	16:18	23:45	-4.4
Mars	Leo	16:22	23:07	05:52	-0.7
Jupiter	Ari	08:26	15:23	22:17	-2.1
Saturn	Vir	20:45	02:21	07:56	0.3

Beginning of May, 2012

	Const	Rise	Transit	Set	Mag
Sun		06:19	13:17	20:14	-26.8
Mercury	Psc	05:32	11:52	18:09	-0.1
Venus	Tau	08:08	15:57	23:44	-4.5
Mars	Leo	14:30	21:11	03:51	0.0
Jupiter	Ari	06:48	13:52	20:53	-2.0
Saturn	Vir	18:36	00:14	05:53	0.3

Beginning of June, 2012

	Const	Rise	Transit	Set	Mag
Sun		05:54	13:18	20:42	-26.8
Mercury	Tau	06:17	13:45	21:18	-1.7
Venus	Tau	06:13	13:46	21:14	-3.9
Mars	Leo	13:18	19:43	02:08	0.5
Jupiter	Tau	05:09	12:20	19:28	-2.0
Saturn	Vir	16:26	22:06	03:46	0.5

Tau	Taurus, The Bull
Psc	Pisces, The Fishes
Leo	Leo, The Lion
Vir	Virgo, The Maid
Ari	The Ram

INSIDE THIS ISSUE

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About: A Brief History of the Space Shuttle, part 2

One of the most significant and lasting missions of the space shuttle was constructing the International Space Station (ISS).

December 4, 1998 launch (Endeavour) STS-88

This was the first assemblage mission of the ISS. It mated the **Unity node** (U.S.) with the **Zarya module** (Russian). Thus began the incredible saga of construction of the space station.

October 11, 2000 launch (Discovery) STS-92

This mission flew the **Z1 truss** among other things to the ISS. Despite the mission number, this was the **100th Space Shuttle mission** flown.

February 7, 2001 launch (Atlantis) STS-98

The **Destiny lab** module, which looks like a very large trash can with portholes, was flown to the space station and installed during three **EVA's** (Extra-vehicular Activities) or space walks by the Atlantis crew.

April 19, 2001 launch (Endeavour) STS-100

The famous Canadian robotic arm, **Canadarm2**, was deployed to the ISS. This was a very significant piece of equipment as it was used both for maintenance and continued construction. **Chris Hadfield** became the first Canadian to walk in space on that date.

July 12, 2001 launch (Atlantis) STS-104

The primary air lock for the space station, called the **Quest Joint airlock**, was transported and installed on the ISS.

April 8, 2002 launch (Atlantis) STS-110

The **SO Truss**, the structural spine of the space station, was installed.

January 16, 2003 launch (Columbia) STS-107

After a successful take off, rendezvous with the ISS, and conducting experiments related to microgravity, the **Columbia**, and her entire crew of seven, including the first Israeli astronaut Ilan

Ramon, were lost during reentry. Remarkably, thirty seven pages of Ramon's personal mission diary survived the tragedy and was recovered. This was returned to his widow, Rona Ramon.

July 26, 2005 launch (Discovery) STS-114

Two and a half years after the fatal flight of Columbia the shuttle returned to space. Although its stated mission was to deliver assorted supplies to the ISS, the real mission was to test various new safety measures. In this, it was quite successful.

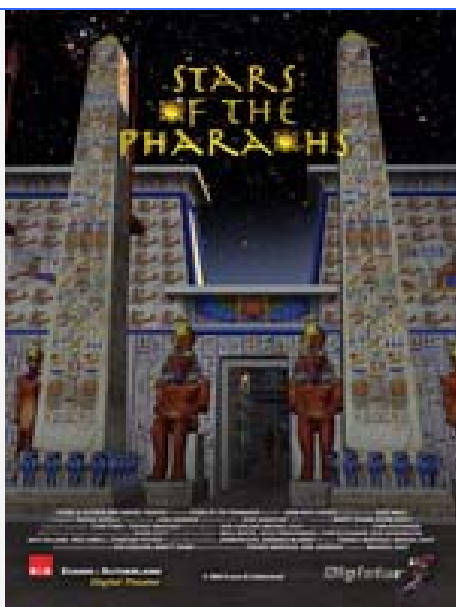
The last flight of the American STS program ended when Atlantis landed safely on July 21, 2011, at 5:57 A.M. on Runway 15 at the John F. Kennedy Space Center. The great vision lasted only 30 years.

It now appears that despite impassioned testimony before the House Science Committee by such astronaut luminaries as Gene Cernan and Neil Armstrong to bring back the shuttle program, the space shuttle is dead and there is no chance of it being resurrected. So for now we must depend on the Russians for taxi service to the International Space Station while we await commercial space craft development whose time line is uncertain. Meanwhile it appears that **NASA** is dithering about its future in space exploration. This is an unfortunate state of affairs for our once proud, aggressive, and leading edge space program.

To see the distinguished space ships in their last resting places, you can go to one of the following:

1. **Atlantis** will remain at the Kennedy Space Center in Florida
2. **Endeavour** will go to the California Science Center in Los Angeles
3. **Discovery** will go to the Smithsonian's National Air and Space Museum's Steven F. Udvar-Hazy Center in northern Virginia
4. **Enterprise**, which is now on display at the Smithsonian's National Air and Space Museum's Steven F. Udvar-Hazy Center, will move to New York City's Intrepid Sea, Air, and Space Museum.

2012 Planetarium Shows



April 13 & 27, 2012

8:00 P.M. Stars of the Pharaohs

9:00 P.M. Origins of Life

May 11 & 25, 2012

8:00 P.M. Stars of the Pharaohs

9:00 P.M. Origins of Life

June 8, 2012

8:00 P.M. Stars of the Pharaohs

9:00 P.M. Origins of Life

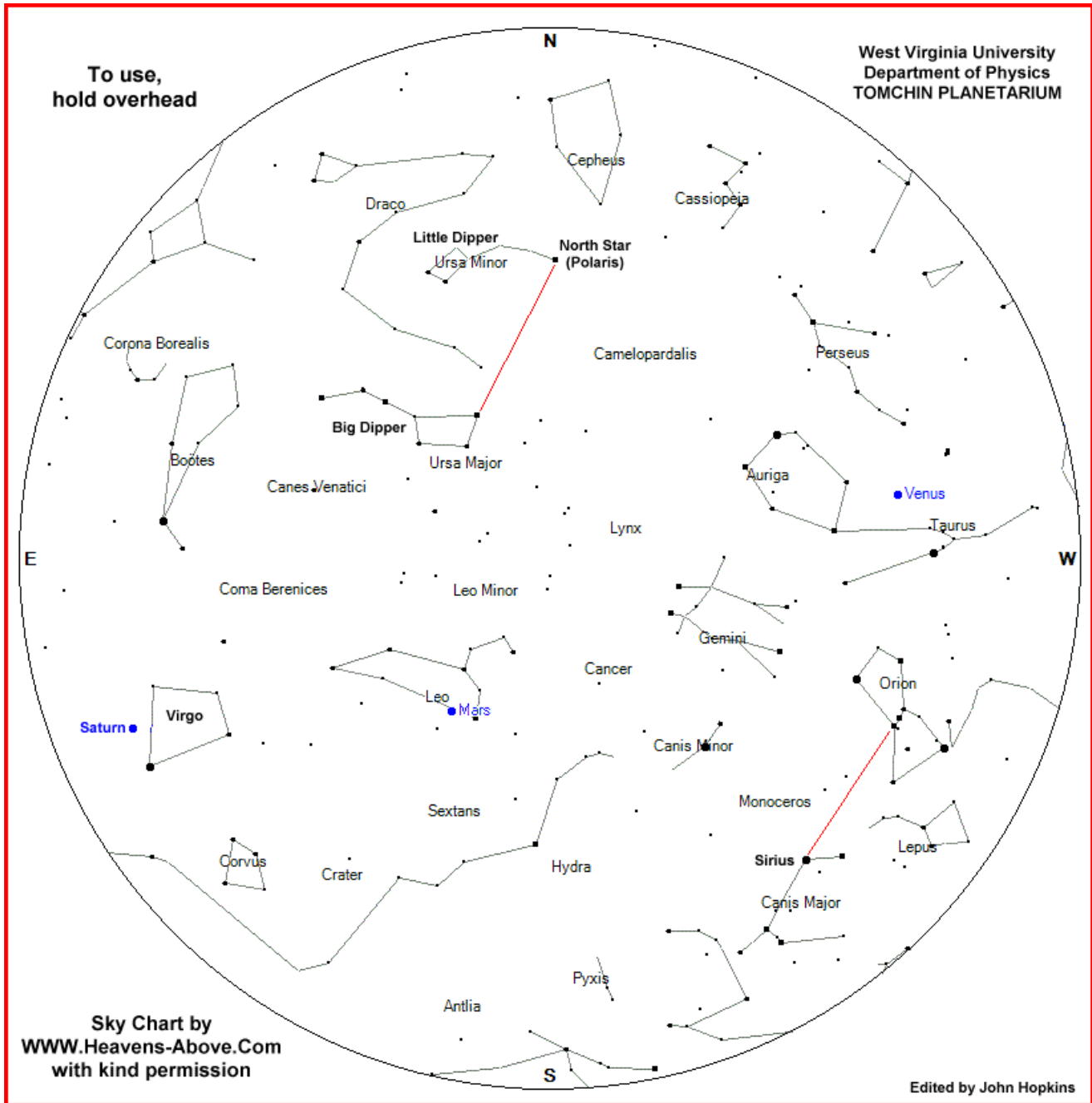
For those who are interested in bringing a group, such as schools or scouts, during the day, please call for more information. These shows are usually given on Tuesday or Thursday mornings.

For further information or reservations, please call John Hopkins at (304)293-4961 or by email at: jghopkins@mail.wvu.edu

Selected Sunrise/Sunset and Moon Rise/Moon Set Times

Date	Sunrise	Sunset	Moon Rise	Moon Set	Moon Phase
Apr 6	6:56 A.M.	7:48 P.M.	8:07 P.M.	6:27 A.M.	Full Moon
Apr 13	6:45 A.M.	7:55 P.M.	2:27 A.M.	12:46 P.M.	Last Qtr
Apr 21	6:34 A.M.	8:03 P.M.	6:29 A.M.	8:44 P.M.	New Moon
Apr 29	6:23 A.M.	8:11 P.M.	1:05 P.M.	2:11 A.M.	First Qtr
May 5	6:16 A.M.	8:17 P.M.	8:09 P.M.	5:37 A.M.	Full Moon
May 12	6:08 A.M.	8:24 P.M.	1:39 A.M.	12:45 P.M.	Last Qtr
May 20	6:01 A.M.	8:31 P.M.	5:41 A.M.	8:30 P.M.	New Moon
May 28	5:56 A.M.	8:38 P.M.	1:04 P.M.	1:16 A.M.	First Qtr
Jun 4	5:53 A.M.	8:43 P.M.	9:12 P.M.	5:58 A.M.	Full Moon
Jun 11	5:52 A.M.	8:47 P.M.	1:09 A.M.	1:38 P.M.	Last Qtr
Jun 19	5:52 A.M.	8:50 P.M.	5:56 A.M.	8:55 P.M.	New Moon
Jun 26	5:54 A.M.	8:52 P.M.	1:07 P.M.	12:21 A.M.	First Qtr

April 2012 Sky Chart* for:
 10:00 P.M at the beginning of the month
 9:00 P.M in the middle of the month
 8:00 P.M at the end of the month



*Sky Chart used with the kind permission of Heavens-Above at <http://www.heavens-above.com/>

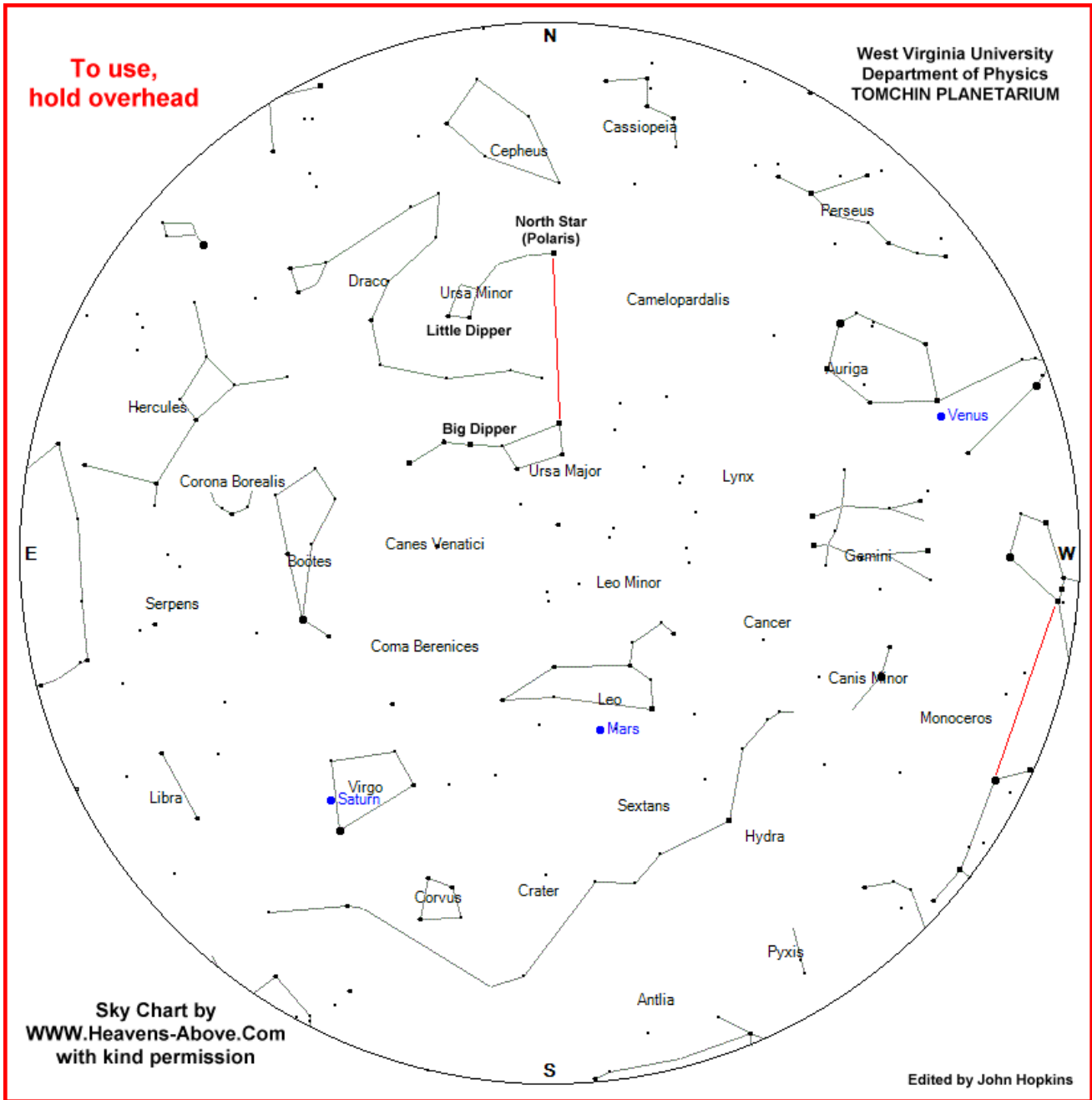
The TOMCHIN PLANETARIUM is named in honor of the late Harold Tomchin, of Princeton, W.Va., who made a generous donation to ensure its continuing operation, and whose family continues to support the planetarium for the educational benefit of WVU students, staff, and faculty members, as well as the local community. Contributions can be made in support of the planetarium through the WVU Planetarium Project at the WVU Foundation, Inc., phone (304)284-4000. Thank You.



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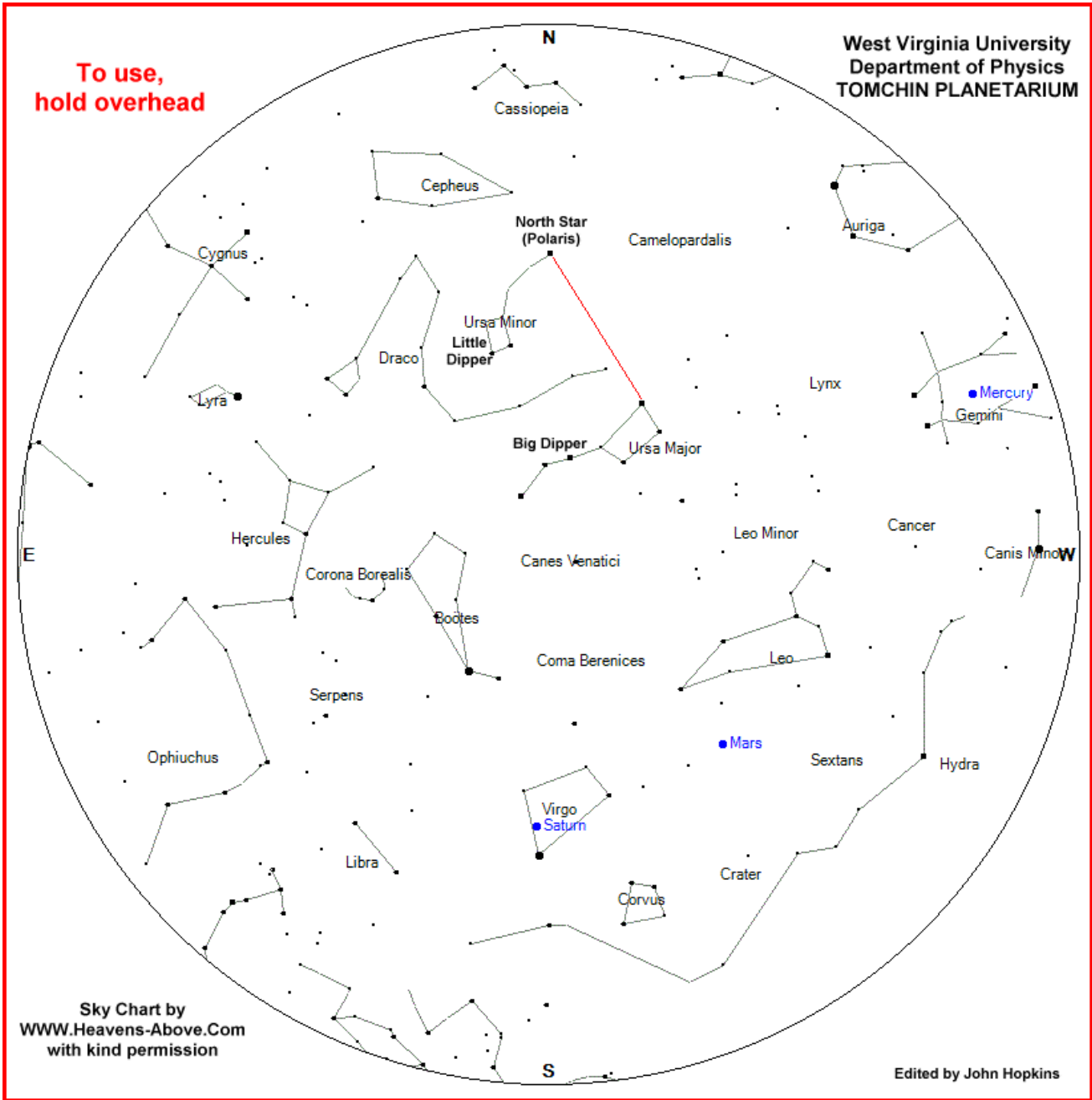
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