

Mountaineer Skies

Volume 2, Issue 1

<http://www.as.wvu.edu/~planet/index.html>

January 2002

From The Editor:

It is easy to see the International Space Station (ISS) or one of the space shuttles in orbit if you know where to look. NASA has made it easy for us to find them.

Go to

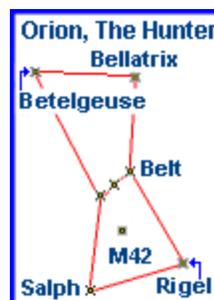
<http://liftoff.msfc.nasa.gov/RealTime/Jpass/PassGenerator/help.html>

Read the page. At the bottom of that page, enter your email address and then press the Add/Modify button. You will be taken to another screen when you will enter your 5 digit Zip code. If all you want is to see the space shuttle and the ISS, just press I'm Done. If you want other satellites, select More Options and continue. If you are just beginning, probably you will want only the space shuttle and the ISS. That is all you have to do. You will receive your predictions very soon.

We appreciate this suggestion from R.J.

In The Sky This Month

Orion, The Hunter, dominates the southern winter sky. With its distinctive shape and many bright stars, it is very easy to find. The lower right most star is the brightest star in Orion called Rigel, a red super giant. The upper left most star is called Betelgeuse (pronounced "beetle juice"). It is a blue super giant and the second brightest star in Orion.



M42, also called the "Great Orion Nebula" is located near the middle of Orion's sword which hangs from his belt. With the naked eye it appears as a fuzzy patch. Binoculars or a telescope will begin to show details of this beautiful sight.

Visible Planets in the Night Sky

Jupiter is in Gemini this month and as it is at opposition, it will appear about as big and bright as it ever gets.

In Taurus, near the V this month, Saturn is visible and, as the rings are tilted towards us, we will have a spectacular view of them.

Mars has lost its brightness and is seen as a small orange spot, low in the west-southwest below the western fish in Pisces.

Mercury is usually very difficult to find as it is often lost in the Sun's glare. However, for the first three weeks in this month, if you look low in the west-southwest about 45 minutes after sunset, you may be able to see this elusive planet.

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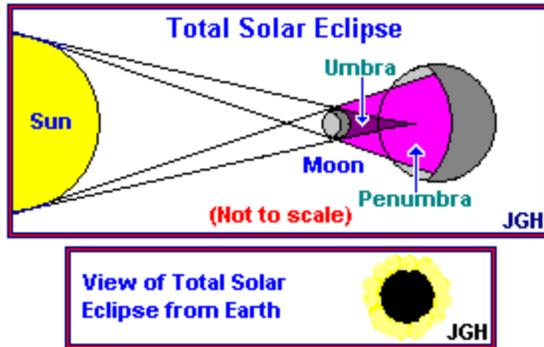
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About: Solar Eclipses

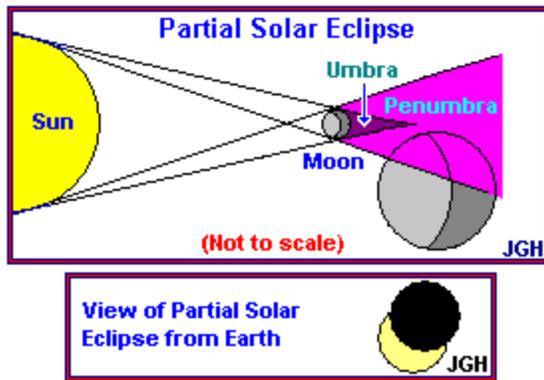
Solar eclipses happen when the moon comes between the Earth and Sun and can only occur at New Moon. This happens at least twice a year somewhere in the world.

There are three types of solar eclipses, the Total, the Partial, and the Annular Total Solar Eclipse.

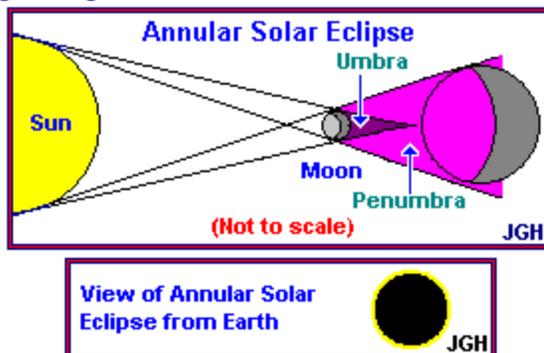
Total Solar Eclipse – the moon's umbral shadow sweeps across the Earth's surface



Partial Solar Eclipse – the Moon's umbra passes above (or below) the Earth

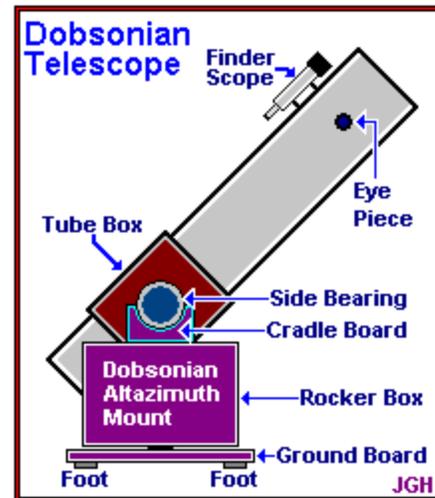


Annular Solar Eclipse – the Moon's umbra is not long enough to reach the Earth



Dobsonian Telescopes

Dobsonian telescopes are really a type of Newtonian telescope with a particular type of mount. Invented by John Dobson, this mount was designed to reduce the cost of the instrument.



A **altazimuth mounting** permits both horizontal and vertical rotation of the telescope.

A **Newtonian reflector on a simple, boxy, altazimuth mount**, offers the biggest aperture for the lowest price. It should be noted that when it comes to viewing the night sky, there is no substitute for a large aperture. The bigger a telescope's main lens or mirror, the fainter the objects that will be visible, and, given good optics, the sharper the details.

To provide a big aperture at low cost, a standard Dobsonian excludes many other features. It won't follow the stars with a motor drive and it can't do most celestial photography. But it does have the virtue of simplicity and, hence, breakdowns are few and when they do happen, repairs are normally simple to make.

2002 Planetarium Shows

Magellan: Report from Venus – The Magellan radar-mapping mission to Venus was extraordinarily successful; the spacecraft returned more data than all NASA's previous planetary missions combined. During this half-hour planetarium show, we follow Magellan's progress, from its launch through the most significant discoveries. Included are spectacular images of volcanoes, impact craters and landslides. Important planetary science topics of volcanism, tectonism, and impact cratering are covered, and radar imaging is discussed.

| | | |
|---|---|--|
| January 11 & 25, 2002 <i>Magellan from Venus</i> | February 8 & 22, 2002 <i>Magellan from Venus</i> | March 8 & 22, 2002 <i>Magellan from Venus</i> |
| April 12 & 26, 2002 <i>Magellan from Venus</i> | May 10 & 24, 2002 <i>Magellan from Venus</i> | June 14, 2002 <i>Magellan from Venus</i> |
| July, 2002 Closed | | |

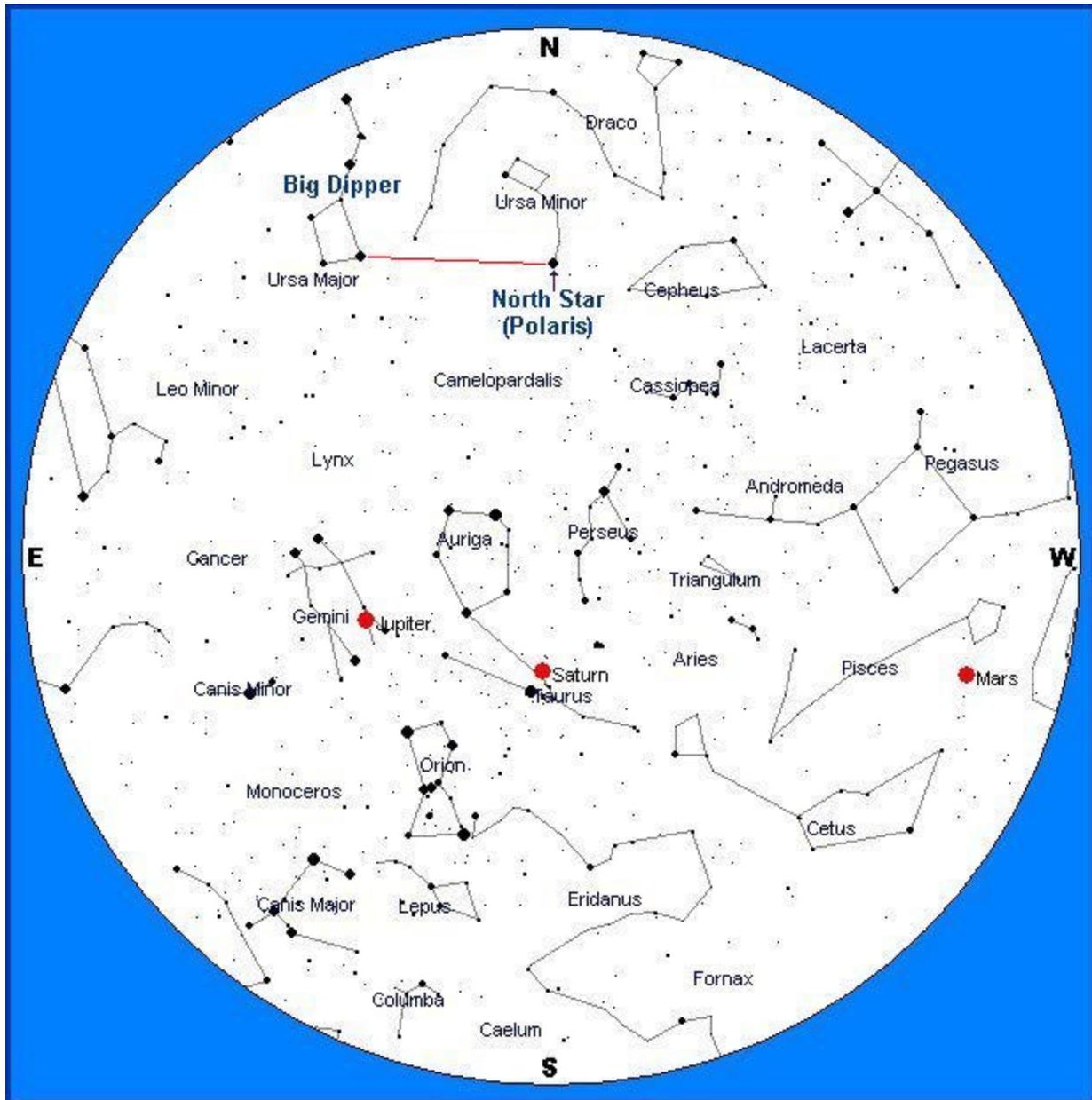
For those who are interested in bringing a group, such as schools or scouts, during the day, please call for more information. These shows are usually given on Tuesday or Thursday mornings.

For further information or reservations, please call John Hopkins at (304)293-3422, extension 1433 or by email at: jhopkins@mail.wvu.edu

Selected Sunrise/Sunset and Moon Rise/Moon Set Times

| Date | Sunrise | Sunset | Moon Rise | Moon Set | Moon Phase |
|--------|-----------|-----------|------------|------------|------------------|
| Jan 5 | 7:41 A.M. | 5:10 P.M. | None | 12:04 P.M. | Last Quarter |
| Jan 13 | 7:40 A.M. | 5:18 P.M. | 7:55 A.M. | 5:25 P.M. | New Moon |
| Jan 21 | 7:36 A.M. | 5:27 P.M. | 11:53 P.M. | 12:16 A.M. | Waxing Gibbous |
| Jan 28 | 7:31 A.M. | 5:35 P.M. | 5:20 P.M. | 7:31 A.M. | Full (Wolf) Moon |

January 2002 Sky Chart* for:
8:00 P.M at the beginning of the month
9:00 P.M in the middle of the month
10:00 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 Foundation Inc.



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