

# January 2012 Sky Events – the Planets

- ★ **Venus** and **Jupiter** continue to brighten our early evening sky – Venus low in the southwest and Jupiter high in the south.
- ★ These 2 bright planets outshine all the stars – Venus at magnitude -4.0 and Jupiter at magnitude -2.5.
- ★ This month find **Jupiter** near the Aries/Pisces border and **Venus** in the constellations Capricornus and Aquarius.
- ★ As the month advances, Venus approaches closer to Earth and appears higher above the SW horizon.
- ★ **Jupiter** reaches **quadrature** (90° east of the Sun) on January 22<sup>nd</sup>.

# January 2012 Sky Events – the Planets

- ★ Speedy **Mercury** is approaching **superior conjunction** (positioned on the opposite side of the Sun from the Earth) on Feb. 7<sup>th</sup>, and will be challenging to see this month.
- ★ During the first 2 weeks of the month, you will find Mercury very low in the SE in the pre-dawn sky.
- ★ **Uranus**, at magnitude 5.9, can be found after dark through a telescope **in Pisces**.
- ★ **Neptune**, at magnitude 8.0, can be found in the early evening through a telescope **in Aquarius**.
- ★ **Venus passes Neptune** on January 12<sup>th</sup> & 13<sup>th</sup>, shining 1.2° below (and 60,000 times brighter) than the distant and faint speck.

# January 2012 Sky Events – the Planets

- ★ **Mars** spends the month **on the Leo/Virgo border**.
- ★ Mars rises about 11:00 p.m. at the beginning of the month (and about 9:00 p.m. at the end of the month), but it won't be high enough in the sky for quality telescope observing until a few hours after it rises.
- ★ Viewing **Saturn** this month requires a pre-dawn outing. It rises after midnight all month.
- ★ **Saturn** spends the month **in the constellation Virgo**, not far from the bright star Spica, which it slightly outshines.
- ★ **Saturn's ring system** "tilt" is a very favorable  $15^\circ$  from edgewise this month, and it will continue to increase as it approaches its maximum angle of  $27^\circ$  in 2017.

# January 2012 Sky Events

## A conjunction of the Moon and brilliant Jupiter

On the nights of Jan. 1 – 3, looking high in the southern sky shortly after sunset, there is a splendid conjunction of the gibbous Moon with the giant planet Jupiter.

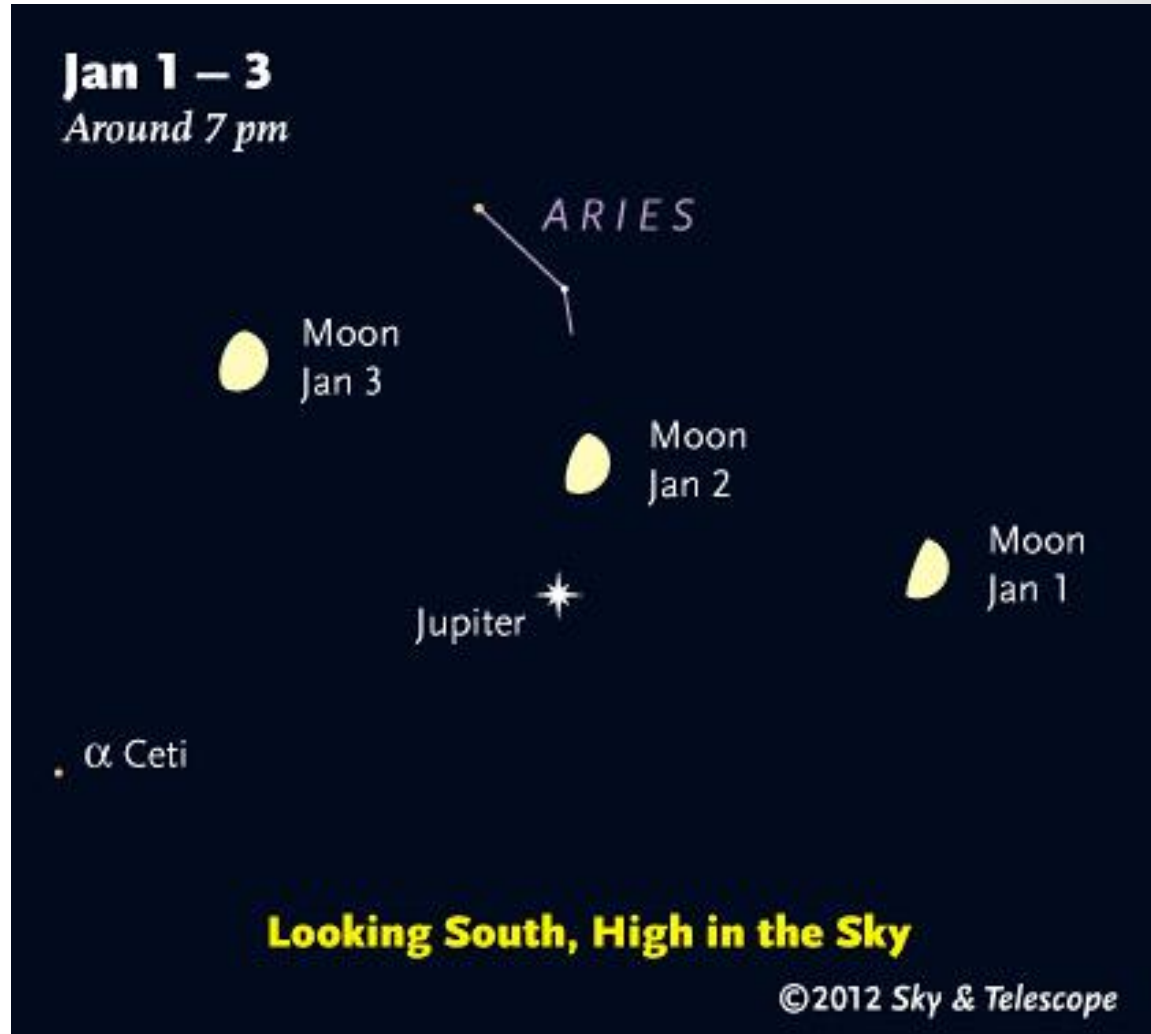


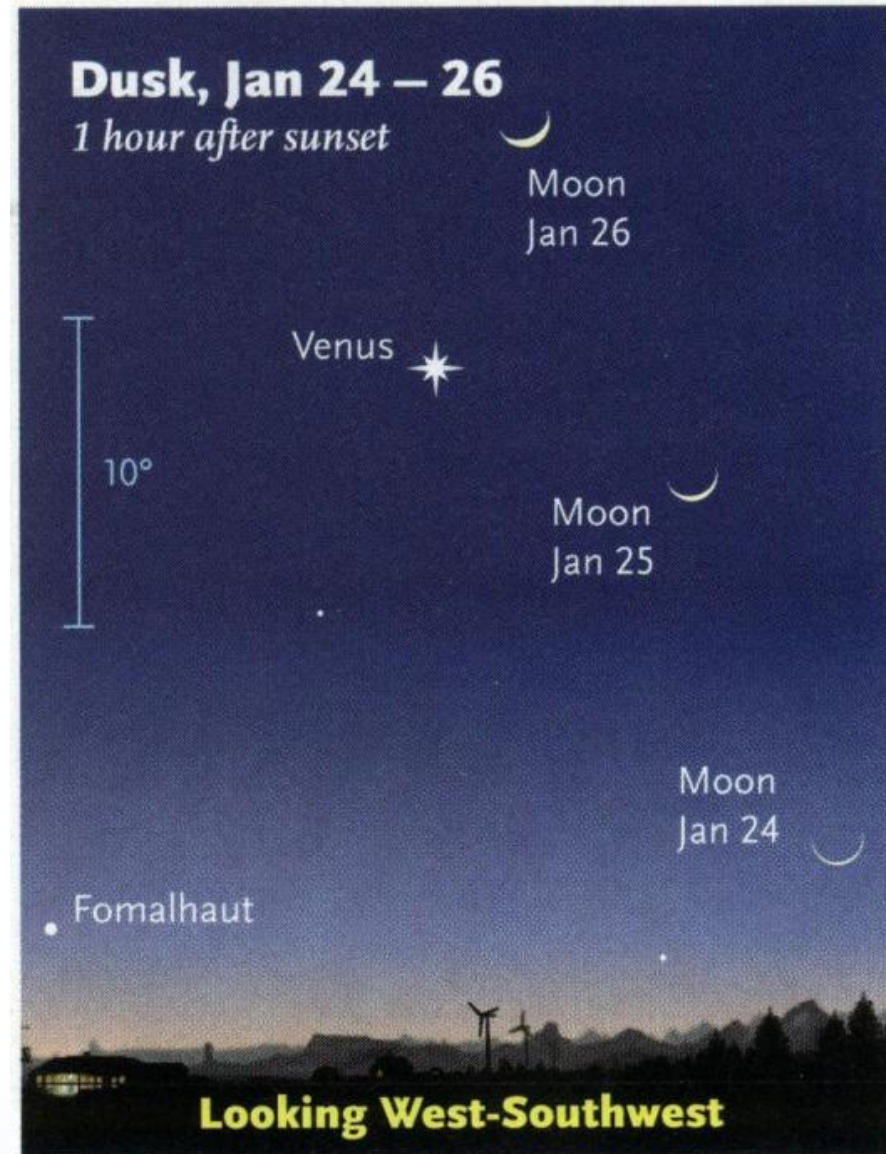
Image courtesy of Sky & Telescope

# January 2012 Sky Events

## A conjunction of the Moon and brilliant Venus

On the nights of Jan. 24 - 26, looking in the west-southwest sky shortly after sunset, find the waxing crescent Moon gliding past the planet Venus in the constellation Aquarius.

Image courtesy of Sky & Telescope



# Jan. 2012 Planet Highlights

<u>Planet</u>	<b>Avg. Distance from Earth</b>	<b>Constellation(s)</b>	<b>Avg. Diameter in arc seconds</b>	<b>Avg. Magnitude</b>	<b>Comments</b>
<b>Mercury</b>	<b>1.3 AU<sub>s</sub></b>	Ophiuchus, Sagittarius & Capricornus	<b>5.2</b>	<b>-0.7</b>	Find it low in the SE at dawn in early January
<b>Venus</b>	<b>1.2 AU<sub>s</sub></b>	Capricornus & Aquarius	<b>14.0</b>	<b>-4.0</b>	Find it low in the SW at dusk
<b>Mars</b>	<b>0.9 AU<sub>s</sub></b>	Leo/Virgo	<b>10.3</b>	<b>-0.1</b>	Rises late but before midnight

# Jan. 2012 Planet Highlights

<u>Planet</u>	Avg. Distance from Earth	Constellation(s)	Avg. Diameter in arc seconds	Avg. Magnitude	Comments
Jupiter	4.7 AU <sub>s</sub>	Pisces & Aries	41.4	-2.5	Still well positioned for observing this month
Saturn	9.7 AU <sub>s</sub>	Virgo	17.1	0.6	Find it in the pre-dawn sky
Uranus	21 AU <sub>s</sub>	Pisces	3.4	5.9	Last good month to observe it well

# Jan. 2012 Planet Highlights

<u>Planet</u>	Avg. Distance from Earth	Constellation(s)	Avg. Diameter in arc seconds	Avg. Magnitude	Comments
Neptune	31 AUs	Aquarius	2.2	8.0	Observe it right after dark, as it sets early

# January 2012 Sky Events

- ★ On January 4<sup>th</sup>, the Earth reaches perihelion - closest approach to the Sun for the year.
- ★ It is some 3 million miles closer (or one part in 30 closer) than at the farthest point in its elliptical orbit (aphelion) in July.
- ★ Yet we experience our coldest weather in the northern hemisphere during January.
- ★ It's the Earth's 23.5° axial tilt, not its distance from the Sun, that causes the seasons.
- ★ In January the northern hemisphere is pointed away from the warmth of the Sun.

# The Moon this month – January 2012

- ☾★ First Quarter – 1<sup>st</sup> at 1:14 a.m.
- ☾★ Full Moon – 9<sup>th</sup> at 2:30 a.m. \*\*
- ☾★ Last Quarter – 16<sup>th</sup> at 4:08 a.m.
- ☾★ New Moon – 23<sup>rd</sup> at 2:39 a.m.
- ☾★ First Quarter – 30<sup>th</sup> at 11:10 p.m.

\*\* The **Winter or Wolf Moon**, and one of the highest full moons of the year, transiting at 70° above the southern horizon.

**Unless otherwise indicated, all times are EST**

Friday evening, Jan. 20<sup>th</sup>

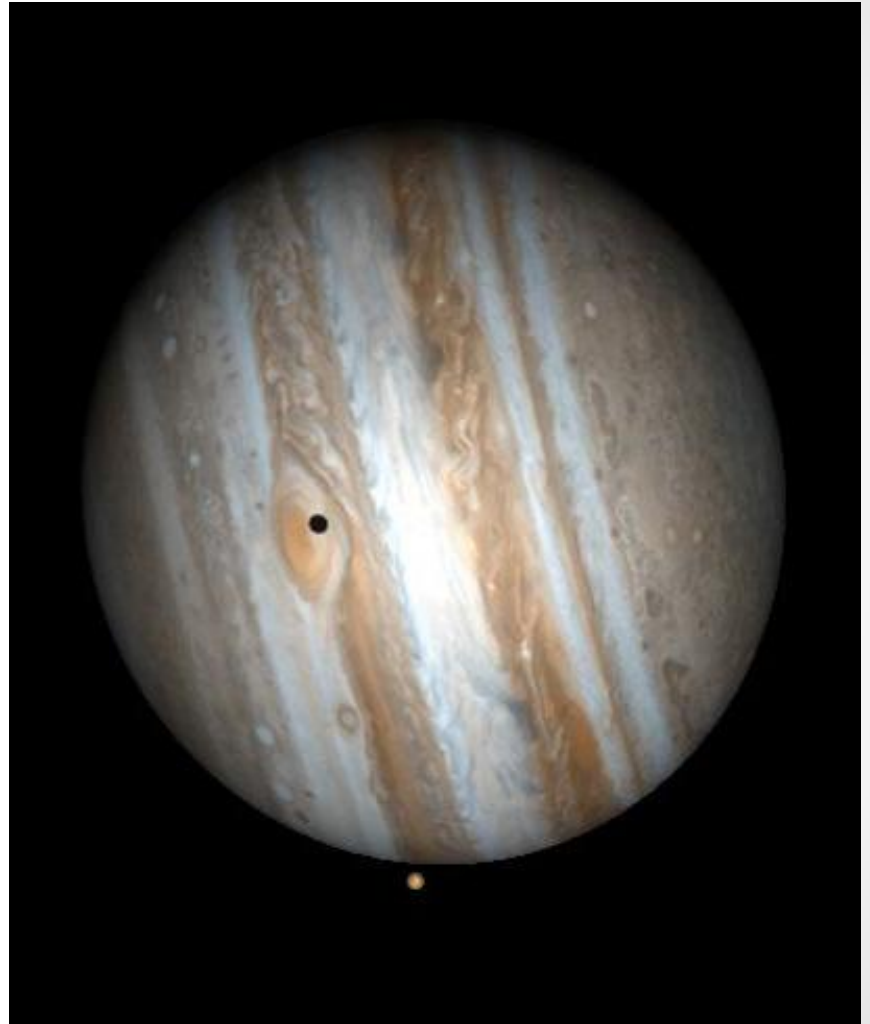
## Monthly club stargaze

- ★ **Sunset:** 5:45 p.m. EST
- ★ Find **Venus** low in the SW in the constellation Aquarius just after sunset. In a telescope you should be able to detect its **gibbous** shape.
- ★ **Jupiter** can be found well above the S-SE horizon at sunset, and all 4 of its Galilean satellites will be in view tonight until **8:09 p.m.**
- ★ At that time Jupiter's moon **Io begins transit** across the planet's disk, followed by its shadow around 9:26 p.m.
- ★ Meanwhile Jupiter's "great red spot" transits its central meridian about **10:20 p.m.** tonight.

# January 20, 2012 Star Gaze

## Io's shadow eclipses Jupiter's "great red spot" tonight

- ★ Use Io's shadow to help locate Jupiter's "great red spot" tonight around 10:20 p.m.
- ★ Notice the Galilean moon Io at the bottom of the image, shortly after erupting from transit.
- ★ Under clear, steady skies and using medium to high magnification, a telescope should make this scene visible for you.



The scene around 10:20 p.m. EST  
looking west.

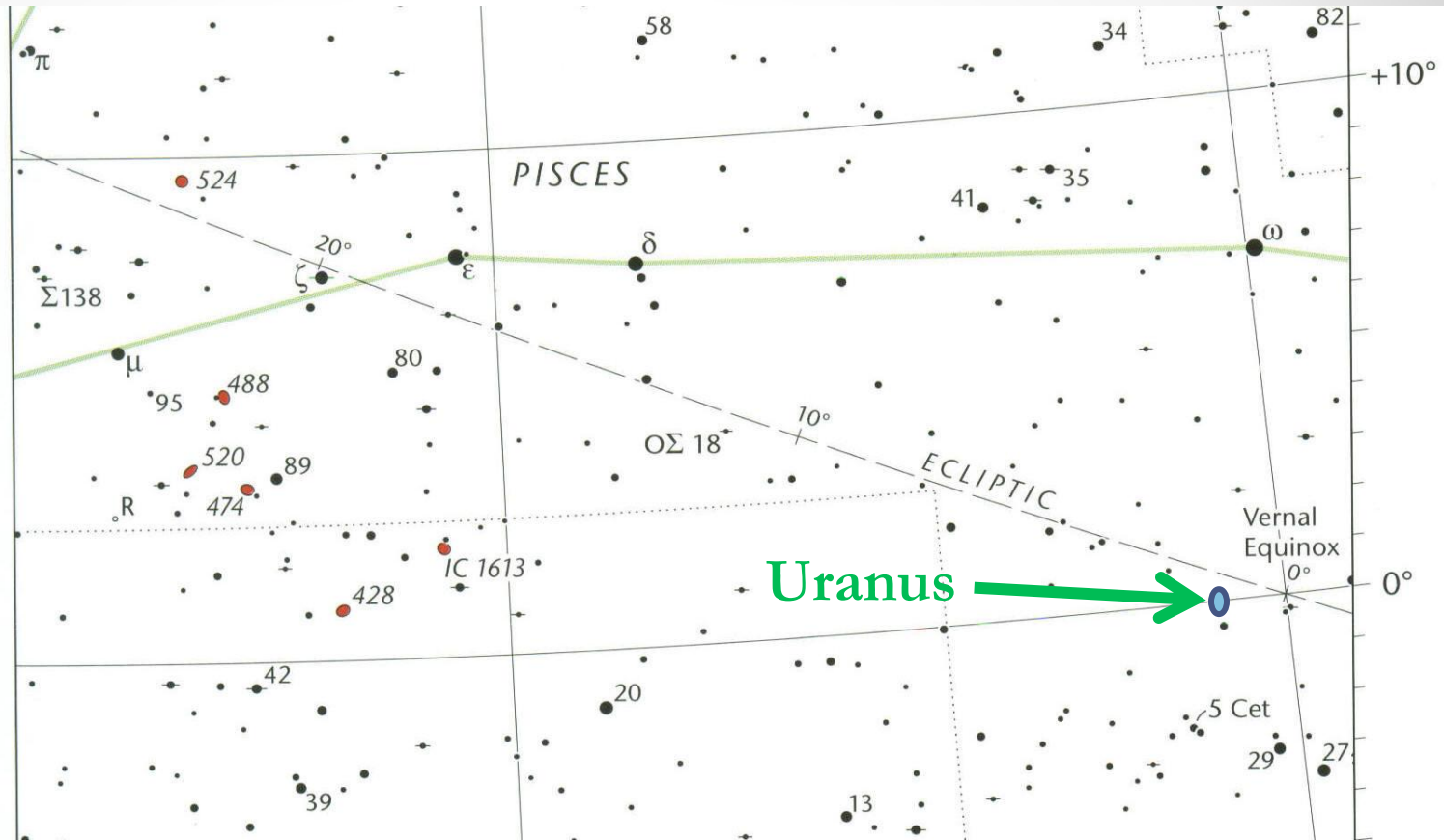
Friday evening, Jan. 20th

## Monthly club stargaze

- ★ This would be a good night to locate and observe the planet Uranus and the 2 other large galaxy members of our “local group” – Andromeda galaxy (M31) and the Triangulum galaxy (M33).
- ★ All 3 of these objects are well positioned in our sky for viewing tonight.
- ★ To observe Uranus you will need a telescope or binoculars along with a good location chart, digital-setting-circles, and/or a go-to telescope.
- ★ You can view the 2 galaxies with binoculars or a small telescope – they’re very close as far as galaxies go!

# Friday evening, Jan. 20<sup>th</sup>, monthly club stargaze

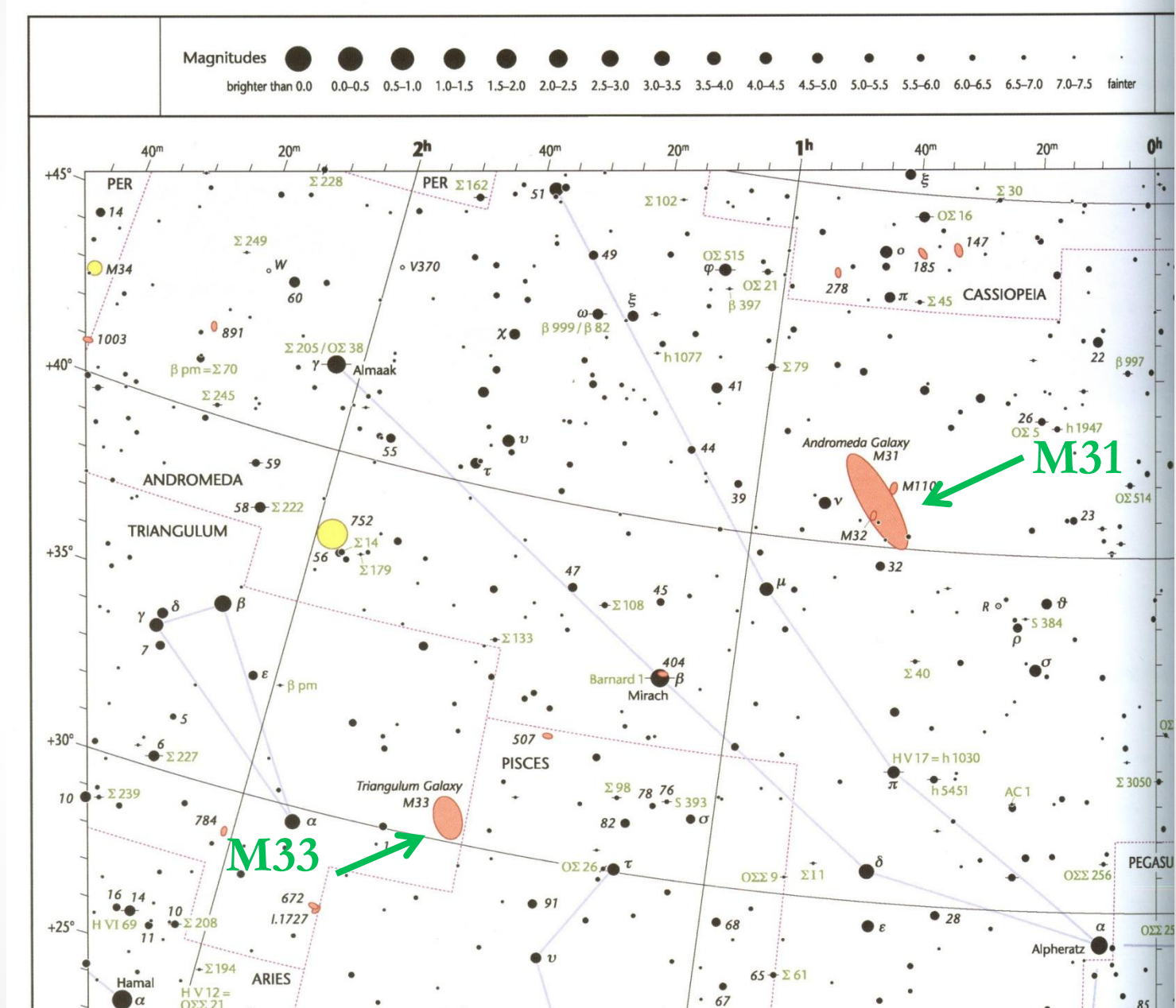
Locate the pale blue disk of 5.9 mag. **Uranus** in the constellation Pisces. It is located near the point of the Vernal (March) Equinox where the celestial equator and the ecliptic cross.



Coordinates: RA 0h 06m & DEC -0° 11'

# Friday evening, Jan. 20<sup>th</sup>, monthly club stargaze

Andromeda (M31) and the Triangulum (M33) galaxies are located high overhead in excellent observing position.



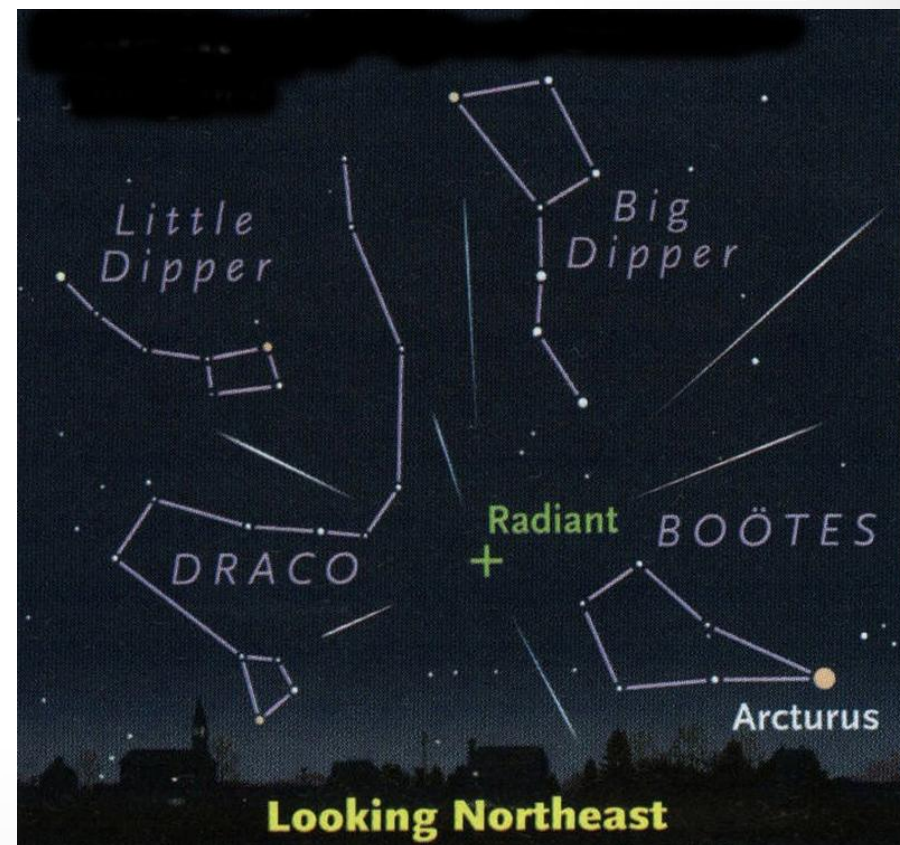
# January 2012 Highlight:

## A cold meteor shower this month

Meteor Shower	Zenithal Hourly Count	Peak Night
Quadrantids	60 to 200	January 4 <sup>th</sup> pre-dawn

The “Quads” peak between 2:00 to 3:00 a.m. EST in the early hours of January 4<sup>th</sup>. Look for them radiating from the NE. This meteor swarm comes from “2003 EH1”, an “asteroid” that is probably a piece of a comet that broke apart some 500 years ago.

Illustration by Sky & Telescope



# January 2012 Telescope Highlight: The Blue Snowball – NGC 7662

The “Blue Snowball” is indexed as NGC 7662 and Caldwell Object 22.

This 8.3 magnitude **planetary nebula** is located some 4,000 light years away **in the constellation Andromeda**.

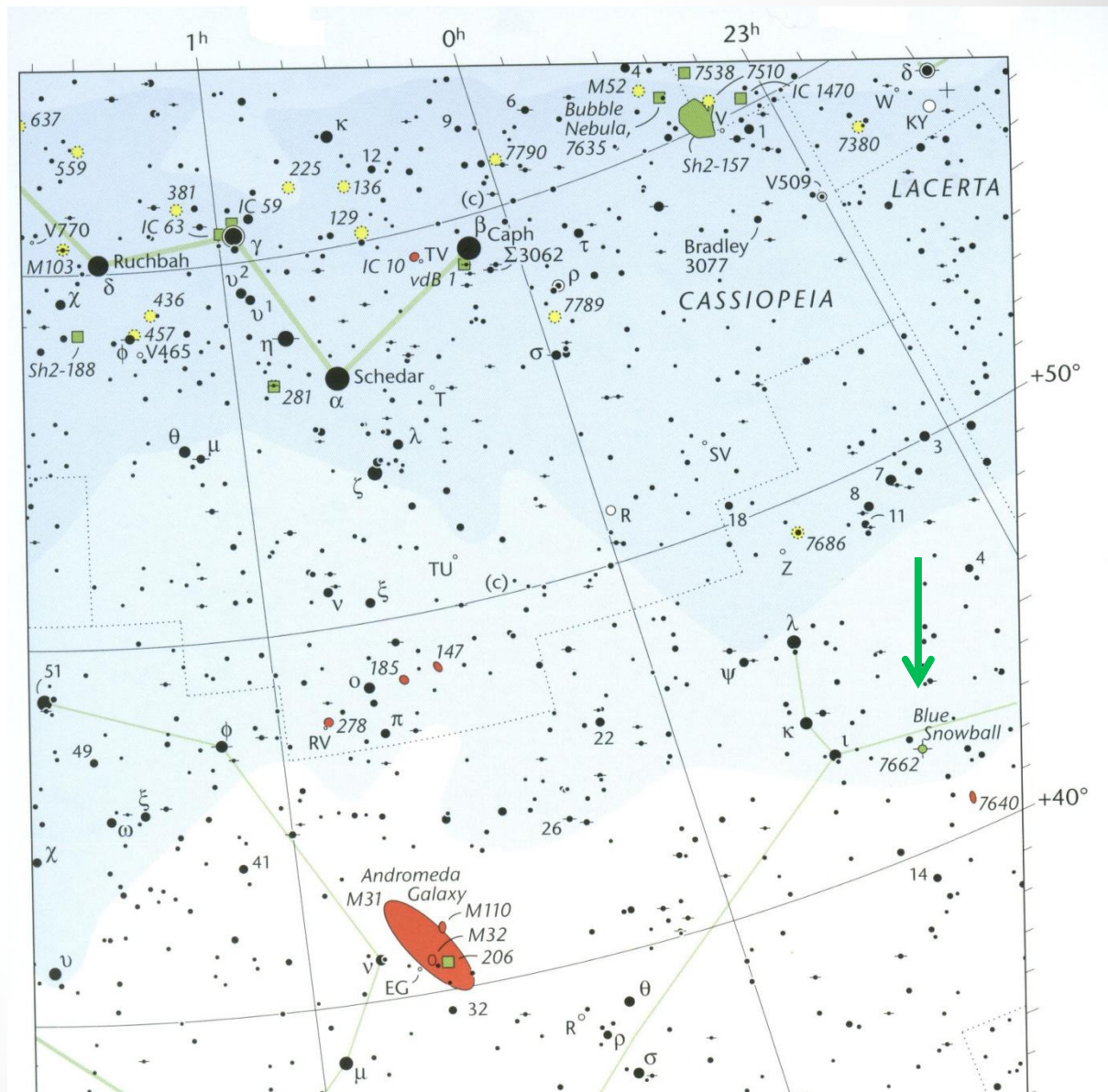
It's blue-green color makes it appear a bit like the planet Uranus → out-of-focus.



Coordinates: RA 23h 26m & DEC 42° 32'

# January 2012 Telescope Highlight: The Blue Snowball – NGC 7662

In the  
constellation  
Andromeda at  
Coordinates:  
RA 23h 26m  
& DEC 42° 32'



# January 2012 Telescope Highlight:

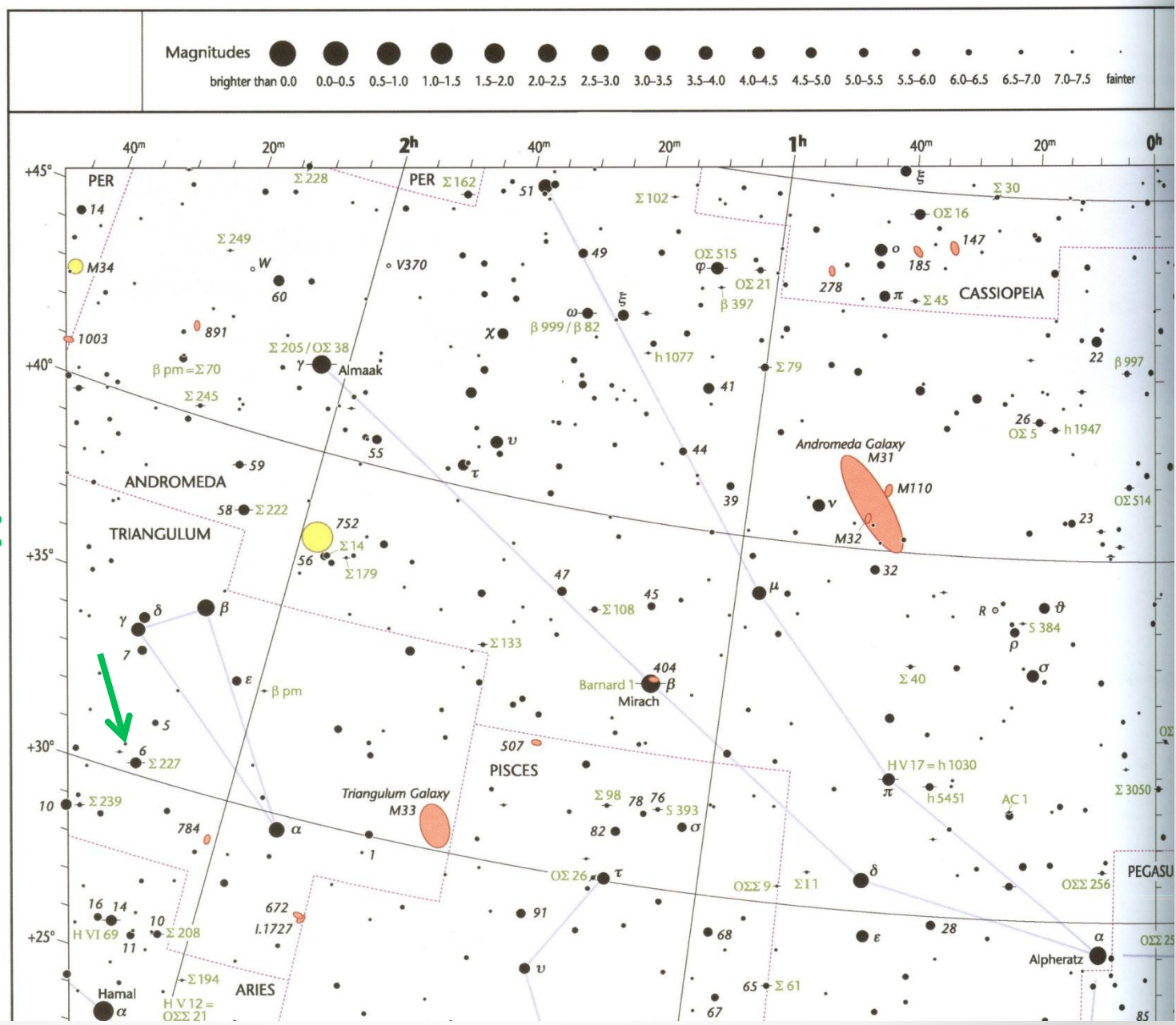
## A striking binary in Triangulum

- ★ The star **Iota (6) Trianguli** is a showcase “pair” with contrasting colors (yellow and green), and it is a true binary star system.
- ★ Located some **306 light years** from Earth, the stars are separated by 3.9 arc seconds.
- ★ At magnitudes 5.3 and 6.7, this stellar pair splits well using a medium to high power eyepiece.
- ★ **Challenge:** Find **another splendid and true binary** in your field of view → located just 30 arc minutes east of Iota is star Hip. 10453 or  **$\Sigma$ 232**.
- ★ This pair of almost equally matched white stars (mags. 7.9 & 7.8) are separated by 6.6 arc seconds and located 767 light years away.

# January 2012 Telescope Highlight:

Star Iota (6)  
Trianguli – a  
showpiece  
binary.

Coordinates:  
RA 2h 12m  
&  
DEC 30° 18'



# January 2012 Telescope Highlight: Rigel's Partner

- ★ **Rigel** (Orion's brightest star at mag. 0.2 and a blue-white supergiant star) has a 6.8 magnitude companion only 10 arc seconds away.
- ★ Easily separated under steady skies with a 5-inch refractor at 75x, but splits more easily at 100x.
- ★ This pair of stars is **773 light years away**.



**End**