Abrams Planetarium Skywatcher's Diary November 2000

To the reader:

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If you would like a printed sample of the November issue, please send a long, self-addressed stamped envelope to:

November Sky Calendar
Abrams Planetarium
Michigan State University
East Lansing, MI 48824

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http://www.pa.msu.edu/abrams/SkyWatchersDiary/Diary.html

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Skywatcher's Diary: November 2000

Wednesday, November 1

An hour after sunset the crescent Moon stands 5 degrees (half a fist's width) above the "handle" of the "teapot" of Sagittarius. Classically pictured as a centaur archer, the constellation is easier for most people to imagine in this more modern form. The "spout" is 13 degrees to the lower right of the Moon. The teapot is tipped toward the right, as though pouring tea on the SW horizon.

Thursday, November 2

The difference between "sundial time" and clock time, known as the Equation of Time, is greatest for the year today. The offset is a bit more than 16 minutes. If you consulted a properly functioning sundial, it would run 16 minutes ahead of your watch.

Friday, November 3

Tonight the Moon approaches First Quarter. It will set before reaching that phase at 2:27 a.m. EST. The Moon lies among the stars of Capricornus and between Uranus and Neptune, 9 degrees from the former and 5 degrees from the latter. Both planets are too faint to be seen without access to a dark sky, optical aid and good finder charts.

Saturday, November 4

Venus now sets almost 2 hours after the sun, so you should be able to spot it without effort. Look for the brilliant "star" low in the SW near the end of twilight. If you crave a challenge, try to locate the planet 15 minutes after sunset. Use binoculars and naked eye.

Sunday, November 5

Venus and Jupiter are now technically observable at the same time. They are 167 degrees apart tonight. If you have clear SW and ENE horizons, watch Venus as it descends. Before it sets, turn around and search for Jupiter rising in the ENE. Use binoculars.

Monday, November 6

Mercury is beginning to emerge in the morning sky. Look low in the ESE an hour before sunrise. Be careful not to mistake it for Spica, the brightest star in Virgo. They are similar in brightness and 7 degrees (less than a fist) apart. Spica is to the upper right of the planet. Mercury will get noticeably brighter in the next couple of weeks.

Tuesday, November 7

Arcturus, the bright star in Bootes, the Herdsman, is about to succumb to evening twilight. Find it low in the WNW 1 1/4 hours after sunset. The arc of the Big Dipper’s handle also leads to it. Arcturus sets 1 1/2 hours after sunset. Each night it sets 4 minutes earlier, which amounts to about 1/2 hour per week. Bid your farewell before the third week of November.

Wednesday, November 8

Jupiter and Saturn are both up by the end of astronomical twilight, about 1 1/2 hours after sunset. Brilliant Jupiter is just above the ENE horizon with bright Saturn one "fist" (10 degrees) to the upper right. By dawn the Earth’s rotation carries these two giants to the west, where Jupiter sits overtop the Ringed Planet.

Thursday, November 9

Mars stands in the ESE a third of the way up an hour before sunrise. The planet may be difficult for you to identify because it’s a nondescript 2nd-magnitude star-like object. With nothing noteworthy

in the immediate vicinity, use its red-orange hue to guide you. The planet's meek appearance offers nothing to suggest that by June it will shine nearly as brilliantly as Jupiter.

Friday, November 10

Examine the Moon carefully tonight. Is it full? Use binoculars and look all around the edge. Can you see a hint of craters on the right (west) side? A casual observer would believe the Moon is full tonight, or perhaps even last night. Full Moon actually occurs tomorrow afternoon at 4:15 p.m. EST.

Saturday, November 11

The full Moon rises minutes after sunset tonight. As the sky darkens Saturn appears 7 degrees (14 moon diameters) to Luna's left. Jupiter sits 11 degrees to Saturn's lower left. Five degrees below the giant planet and slightly to the right is Aldebaran, eye of Taurus, the Bull. These bright objects clustered together make a pretty sight.

Sunday, November 12

Tonight the Moon is 4 degrees to the lower right of Jupiter and 9 degrees to Saturn's lower left. If you saw the Moon last night you will easily notice its intervening motion. Over the last 24 hours the Moon has traveled 13 degrees along its orbit. That works out to roughly a moon diameter every hour. You can continue watching the Moon slide past Jupiter through the night.

Monday, November 13

The Moon rises about 2 hours after sunset tonight. The two bright planets and the gibbous Moon line up. Jupiter is in the middle. Saturn lies 10 degrees (a fist width) to the upper right and the Moon 13 degrees to the lower left. The three objects trace out a small segment of the plane of our solar system. The segment will extend during the next several nights, as the Moon pulls away from the planets.

Tuesday, November 14

Tonight the Moon sits in a large oval of bright wintertime stars sometimes called the "Winter Ellipse." It includes luminaries from Orion, the Twins, the Big and Little Dogs. To see them all, however, you would need to wait 6 hours after sunset; or nearly until midnight; for the last ones to rise.

Wednesday, November 15

Once the Moon rises, about 4 hours after sunset, notice the two bright stars of Gemini to the upper left. Pollux, the lower and brighter of the twins, is 7 degrees (14 moon diameters) away. Castor is 4 1/2 degrees above his sibling.

Thursday, November 16

Mercury rounded the bend of its orbit yesterday, heading toward the backside of the sun. It will stand most directly behind the sun on Christmas day. Now you can see it rising 1 1/2 hours ahead of the sun. Look in the ESE an hour before sunrise. Don't mistake the star Spica for Mercury. It's fainter than the planet and higher up; 11 degrees to the upper right of Mercury. Watch for Leonid meteors before

dawn tomorrow.

Friday, November 17

Predictions are mixed regarding the Leonid meteor shower. Some forecast a storm of "shooting stars" this morning and tomorrow morning around 3 a.m. Others expect just an average year with one meteor every minute or so. The Moon is, unfortunately, uncooperative. A bright Last Quarter phase will obscure the fainter shower members.

Saturday, November 18

The Leonids take their name from the constellation Leo because the meteors seem to radiate from that part of the sky. Don't make the mistake of assuming you should stare at Leo to catch a glimpse of the "shooting stars," however. The meteor streaks may appear anywhere in the sky, so the best technique is to lie on your back and take in the widest view possible.

Sunday, November 19

Saturn is at opposition today. The Earth is overtaking the slower moving ringed planet, and we are passing between it and the sun. Hence we must look opposite the sun to find Saturn. It rises at sunset, for example. We are closer to Saturn at opposition, and, therefore, the planet appears brightest. Due to slightly non-circular orbits, Saturn now appears the brightest it has in 25 years; magnitude -0.4.

Monday, November 20

Before dawn tomorrow morning the crescent Moon stands 6 degrees (12 moon diameters) above Mars. The planet is still only 2nd magnitude, and with the bright moonlight Mars' reddish color may be hard to detect. A 4th-magnitude star, Gamma, in Virgo, is 2 degrees to the upper left of the Red Planet.

Tuesday, November 21

The Moon will be a beautiful binocular object the next three mornings, as it wanes its way toward New Moon on the 25th. Tomorrow morning it is 8 1/2 degrees (17 moon diameters) to the upper left of Spica, the brightest star in Virgo. The next morning the Moon has moved to 11 degrees to the lower left of that star.

Wednesday, November 22

Carefully examine the crescent Moon with binoculars this morning and tomorrow morning. Look for interesting craters along the terminator; the line separating the day and night regions of the Moon. Notice a dark oval area near the middle of the bright crescent. It is actually a large crater, about 140 miles in diameter. Its dull floor stands out in contrast to the bright surroundings.

Thursday, November 23

If you have tried unsuccessfully to find Mercury in the morning sky, tomorrow is your day to prevail. An hour before sunrise the planet is just to the right and slightly below the thin crescent Moon. Be sure to observe from a place with an unobstructed ESE horizon because the show takes place only 5

degrees up.

Friday, November 24

Observe the change in orientation of the two giant planets, Jupiter and Saturn, as seen in the evening in the east and then in the western morning sky. Saturn is at the upper right of Jupiter after dusk but below that planet before dawn. If you only noticed these two objects, you could easily believe the planets shifted, when, in fact, the Earth merely rotated to cause the effect.

Saturday, November 25

New Moon occurs at 6:11 p.m. EST. This is the night of the "dark moon," the best time of the month to observe those faint, difficult objects. Whether you use naked eye, binoculars or telescope, the key is to get as far away from city lights as possible. The Milky Way is particularly inviting now; stretching overhead at the end of evening twilight.

Sunday, November 26

You have a rare opportunity tonight to see a young Moon less than 24 hours old (past New). The atmosphere must be exceptionally clear, and you need a flat SW horizon. Look 25 minutes after sunset; timing is important. If you have an accurate compass, the hairline Moon will be 13 degrees to the north of SW, only 3 degrees up. Use binoculars. Venus will be nearly equidistant to the other side of SW but much higher (17 degrees).

Monday, November 27

Ramadan, the Muslim month of fasting, begins at sunset tonight. Like a number of other religious observances, the fast is tied to the first sighting of the New Moon; technically, the first crescent after New Moon. It is a reminder to all of us that long before glossy wall calendars people quite successfully kept track of the year by simply observing the sky.

Tuesday, November 28

The Earth passed Jupiter yesterday; only 8 days after overtaking Saturn. Now it is Jove’s turn to stand opposite the sun. Strictly speaking, the planet officially becomes an "evening star," even though we’ve been watching it after dusk for sometime now. Celebrate by observing Jupiter and its ringed neighbor.

Wednesday, November 29

Photo Op alert! The crescent Moon and Venus strike a beautiful pose in the SW after sundown. A little help from some colorful clouds and you could have a real winner. Start watching 30 minutes after sunset. The show is over about 2 1/2 hours later, when Venus sets.

Thursday, November 30

After nightfall, before Venus sets, let your eyes scan over the Moon and three planets; Venus in the SW and Jupiter and Saturn in the east. The gentle arc you are following is "mainstreet" of our solar

system; the place where all the planets travel. The shape of our planetary system dictates that all the planets remain near this line, sometimes called the "ecliptic." As the Moon moves across the sky during the next week, it will increasingly "fill in the gap" of the arc.

Please send any comments, suggestions, or questions to
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