Abrams Planetarium Skywatcher's Diary June 2000

To the reader:

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

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Skywatcher's Diary: June 2000

Thursday, June 1

Jupiter and Saturn have spent the last month and a half too close to the sun's direction for us to get a glimpse. The pair of planets now is beginning to emerge in morning twilight. They appear about a degree apart (two Moon diameters) this morning in the ENE sky. Look 30 minutes before sunrise. Jupiter is the brighter planet, to the upper left. The thin crescent Moon sits on the horizon 5° below the planets and quite a challenge. Use binoculars. Southern states have a favored viewpoint. As the month proceeds the two planets will be easier to find but farther apart.

Friday, June 2

The Moon is New at 8:14 a.m. EDT this morning. The young Moon will make its first appearance of the month tomorrow night.

The Gemini twins, Pollux and Castor, are in the WNW tonight. Look an hour after sunset for two bright stars side by side about 5° apart and a quarter of the way up from the horizon. The twins are not quite identical. See if you can tell which of the two stars is brighter. Pollux is on the left, Castor on the right.

Saturday, June 3

Many people think Mercury is difficult to see. Choose the right time and it is easy. Mercury makes its best evening appearance of the year this first week of June. Tonight the thin crescent Moon aids in the quest. Look for it 5° to the lower left of Mercury, low in the WNW an hour after sunset.

Sunday, June 4

Find the crescent Moon tonight in the WNW an hour after sunset. To its lower right is Mercury, about 10° away (one fist-width). To the Moon's upper right (8°) are the Gemini twins. To the lower left (16° away) is the bright star Procyon, of Canis Minor, the Little Dog.

Monday, June 5

The Moon is 15° to the left and slightly above the Gemini twins an hour after sunset. As the sky darkens use binoculars to find the Beehive, or Praesepe, star cluster 2° above the Moon. (Be sure to look at the Moon with the binoculars, too.) On a dark night in the Moon's absence, the Beehive can be seen without optical aid as a small patch of light. The cluster contains a couple hundred stars, located 500 light years away.

Tuesday, June 6

In the early evening the Moon is 10° to the lower right of Regulus, the heart of Leo the Lion. Find the "sickle" or "backwards question mark" that marks the head of Leo. Look to the upper right of Regulus and above the Moon. Regulus is the punctuation at the bottom of the "question mark." Young stargazers sometimes think of the pattern as "Capt. Hook's hook."?

Wednesday, June 7

The Moon is still in Leo tonight, to the upper left of Regulus. We often talk about the Moon and planets as being "in" a particular constellation when, in fact, the stars are much farther background objects. We mean to say the solar system body is in the same line-of-sight as the star pattern.

Thursday, June 8

The Moon is exactly First Quarter just before midnight tonight, at 11:29 P.M. EDT. Most calendars that indicate Moon phases use Greenwich time and so will show the First Quarter Moon occurring on June 9.

This evening the Moon is below Denebola, a second-magnitude star marking Leo's tail. For comparison, the brighter stars in the Big Dipper are also second magnitude.

Friday, June 9

Look for Mercury an hour after sunset in the WNW, 8° up. The angular separation between the planet and the sun is at a maximum tonight: 24°. Astronomers use the term "greatest elongation." Think of it as Mercury "rounding the bend" in its orbit.

Mercury forms the apex of an inverted isosceles triangle with the Gemini twins, Pollux and Castor. The twins stand 11° above the planet.

Saturday, June 10

The Moon is nearly due south at sunset tonight. As the sky darkens, find the bright star Spica 12° to the lower left of the Moon. The Moon has moved from Leo to the next zodiac constellation, Virgo. Spica is the brightest star in Virgo. More than twice the Moon-Spica distance to the upper left of the Moon is the even brighter star Arcturus, in the constellation Bootes (pronounced Boh-oh-tees).

Sunday, June 11

Tonight Spica is to the lower right of the Moon whereas last night it appeared to the lower left. Since the Moon is so bright we tend to judge the position of objects with respect to it, as though Spica has moved rather than the Moon. But Spica is nearly the same place tonight as it was last night, at the same time. By watching the Moon at the same time of night for several nights in a row what we see is the Moon's motion in its orbit. From our vantage point the Moon traverses 13° per night through the zodiac.

Monday, June 12

After the sky darkens tonight, find Spica, the bright star 17° (about two fists) to the right of the Moon. We are going to use Spica to find Corvus, the Crow, a faint, but pleasingly-shaped minor constellation. Keep in mind the Moon-Spica separation and look that same distance to the lower right of Spica for four stars in the shape of a mainsail or the vertical tail on an airplane. The top two stars, separated by 3°, point to Spica. The stars are all equally bright-third magnitude. For reference, the fainter star in the Big Dipper is third magnitude.

Tuesday, June 13

Early risers will find Jupiter and Saturn low in the ENE an hour before sunrise. The two giant planets stand side-by-side, 2° separating them. Jupiter, the brighter of the two, is on the left.

Mercury is becoming harder to see. Look low in the WNW an hour after sunset. Pollux, the brighter of the Gemini twins, is about 10° above Mercury

Wednesday, June 14

The Moon looks nearly full tonight, but Full Moon does not occur until Friday. An hour after

sunset the Moon appears in the SSE about one "fist" (10°) above the bright reddish star Antares, heart of Scorpius. To astronomers Antares is a red supergiant, a star much larger and cooler than our sun. The name "Antares" derives from Greek, meaning "Rival of Mars," due to its red color.

Thursday, June 15

The Moon is to the left of Antares this evening. Tomorrow morning, two hours before sunrise, you will find the Moon and Antares low in the SW, and the Moon will appear above Antares, as though it has reversed its orbital motion. The solution to the mystery, of course, is that the apparent rotation of the sky during the night has changed the orientation of the Moon and Antares relative to the horizon. The change would be obvious if you traced the outline of Scorpius at both times.

Friday, June 16

The Moon is Full at 6:27 p.m. EDT and rises a few minutes before sunset. The Full Moon is opposite the sun in the sky. Question: Since the sun sets in the WNW tonight, in what direction does the Moon rise? Answer: ESE, opposite the sun. Now, what direction will the sun rise tomorrow morning? Not ESE, but ENE-the sun rises and sets symmetric about a north-south line through the observer. Where will the Moon set tomorrow morning? See tomorrow’s diary entry for the answer.

Saturday, June 17

The Moon rises and sets symmetric about a north-south line through the observer. Since it rose in the ESE last night, it sets this morning in the WSW.

The Summer Triangle stands in the NE these evenings, heralding the approach of summertime (for the northern hemisphere). This large pattern, consisting of the bright stars Vega, Altair, and Deneb, stretches from the east to the northeast and spans three-quarters of the way from horizon to overhead.

Sunday, June 18

Jupiter and Saturn have climbed noticeably higher an hour before sunrise over the last week. Look for them in the ENE. Jupiter is on the left. The exquisite star cluster known as the Pleiades is about 5° to the upper left of Jupiter. Use binoculars to pick out the stars in twilight.

Monday, June 19

Look to the NE as dusk descends and find the Summer Triangle. The Summer Triangle is not an official constellation, only a helpful pattern. Each of the three stars, Vega, Altair, and Deneb, belongs to a different constellation: Lyra, the Harp, Aquila, the Eagle, and Cygnus, the Swan, respectively. Vega is the brightest and highest of the three stars, Altair is to the east and Deneb in the NE.

Tuesday, June 20

The summer solstice occurs at 9:48 P.M. EDT, marking the start of summer for the northern hemisphere. The sun reaches its highest point north, standing overhead on the Tropic of Cancer in the western Pacific ocean at the moment of the solstice. We in the north celebrate the longest day and shortest night of the year. The earliest sunrise, however, occurred a week earlier for mid-northern

latitudes, and the latest sunset will happen a week from now.

Wednesday, June 21

An hour after sunset the impressive star Arcturus shines in the south three-quarters of the way up. It is the brightest star in the northern celestial hemisphere. Compare it to Vega, high in the NE. Can you tell Arcturus is brighter? Do the two stars appear to have slightly different colors?

Thursday, June 22

At the end of twilight the Big Dipper appears in the NW, bowl tipping down and handle upright. Just less than two dipper-lengths through the bottom of the Big Dipper's bowl, in the west, stands Regulus, the heart of Leo. This familiar springtime star and constellation is drifting into dusk, making way for the summer sky.

Friday, June 23

Jupiter is the brightest starlike object visible at dawn. Saturn is 3° to the upper right of the giant planet. The bright star Capella gleams to Jupiter's left in the NE. Aldebaran, the eye of Taurus, rises 12° to the lower left of Jupiter an hour before sunrise. Use binoculars. A week from now Aldebaran will be much easier to spot.

Saturday, June 24

The Moon reaches Last Quarter at 8:00 p.m. EDT tonight, although don't look for it then. The half-lighted sphere does not rise until after 1:00 a.m. It's easiest to look for this phase during morning daylight hours.

Sunday, June 25

Corona Borealis, the Northern Crown, is a small, faint constellation that is fairly easy to locate because the two brightest stars in the current evening sky point the way. Find Arcturus high in the south and Vega in the ENE. Draw an imaginary line from Arcturus to Vega. One-third of the way is a circlet of faint stars in the form of a laurel wreath crown about 7° across. If the sky is dark enough you won't miss it. Another third of the way to Vega is Hercules, its principal feature being a keystone shape approximately the same size as the crown.

Monday, June 26

This year solar activity is expected to be maximum: numerous sunspots and various solar "events." Anytime you are in a reasonably dark location at night check for aurora, or Northern Lights. They range from subtle glows low in the north to magnificent celestial light shows of blue, green, red, yellow dancing clouds that fill the sky. They are created by energetic particles from the sun interacting with air molecules in the earth's upper atmosphere and causing the air to fluoresce.

Tuesday, June 27

The waning crescent Moon is approaching and passing Jupiter and Saturn over the next several

mornings. This morning an hour before sunrise the Moon is two "fists" to the upper right of the planets. The crescent Moon also makes a wonderful target for binoculars and small telescopes. The craters stand out in exaggerated relief along the terminator, that boundary between light and dark.

Wednesday, June 28

This morning the Moon is less than a "fist" to the right of Saturn and Jupiter. Tomorrow morning the Moon will be the same distance away from the planets but below Jupiter.

Thursday, June 29

An hour before sunrise the thin Moon is below Jupiter and to the upper right of the bright star Aldebaran in Taurus, slightly closer to the star. Try to find several fainter stars between the Moon and Aldebaran. These are members of the Hyades star cluster. Use binoculars.

Friday, June 30

This morning is the last chance to see the thin wisp of a crescent Moon before New phase. Armed with binoculars, look 45 minutes before sunrise just above the horizon in the ENE. New Moon occurs tomorrow at 3:20 p.m. EDT.

Please send any comments, suggestions, or questions to
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