

Abrams Planetarium Skywatcher's Diary September 2000

To the reader:

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

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Abrams Planetarium SKYWATCHER'S DIARY: September 2000

Friday, September 1

At dusk this evening the bright star Spica, part of Virgo, appears midway between the crescent Moon and the horizon, in the WSW. For more of a challenge, search for Venus near the western horizon. The bright planet should be easier to spot 15 minutes earlier when it is not so low, about 30 minutes after sunset. Binoculars can help in locating Venus against the bright twilight.

Saturday, September 2

Jupiter is now 90 degrees, a quarter circle, to the west of the Sun. It, therefore, leads the Sun across the sky by about a quarter day. You can predict Jupiter's visibility using this fact. For example, would you expect to see Jupiter at sunset? No, because the giant planet set a quarter day earlier, around midday. Approximately when would Jupiter rise? A quarter day before the Sun rises, or about midnight.

Sunday, September 3

Tonight the Moon is a "fat" crescent, a couple days before First Quarter. The Moon sits among the stars of Libra, the Scales, one of the faintest constellations of the zodiac. Its two brightest stars are only 3rd magnitude, a step fainter than Polaris, the North Star. One is located a "half-fist width" (6 degrees) to the upper right of the Moon, the other a fist width (9 degrees) to the Moon's lower right.

Monday, September 4

The Moon is near the head of Scorpius, the Scorpion, tonight. Antares, the heart of the scorpion and brightest star in the constellation, is located a fist width (9 degrees) to the Moon's lower left. Antares usually appears to have a red or orange tint compared to other bright stars. It is a red supergiant star, 700 times larger and significantly cooler than our Sun.

Tuesday, September 5

If you observed the Moon and Antares last night, notice the Moon's position tonight with respect to Antares. The Moon is now about 10 degrees to the upper left of the star. If you are unfamiliar with the constellations, you may have difficulty determining which object moved. The Moon shifts to the east about 12 degrees per night relative to the stars.

Wednesday, September 6

The Moon is just to the west of due south an hour after sunset. It sits to the upper right of the "teapot" pattern of eight stars, the most recognizable part of Sagittarius. The bright moonlight may make the telltale shape of 2nd and 3rd-magnitude stars difficult to spot. Tonight the Moon is closest to the "spout." Tomorrow night the Moon will stand over the "handle."

Thursday, September 7

Mars is slowly creeping into the morning sky, climbing higher out of the morning twilight as the days pass. An hour before sunrise look for it low (8 degrees up) between E and ENE. The planet is faint now, only 2nd magnitude, due to its greater-than-average distance from Earth. Don't mistake Regulus for Mars. The star is a bit brighter but 5 degrees lower. By mid month the two bodies will appear within a degree of each other.

Friday, September 8

For the next several nights the bright Moon passes through the faintest patch of zodiac. None of these constellations boasts a star brighter than 3rd magnitude. Tonight Luna leaves the relatively bright Sagittarius to enter Capricornus, where it remains through September 10th. The nights of the 11th, 12th and 13th find the Moon in Aquarius. Pisces is host to the Moon on the 15th.

Saturday, September 9

An hour after sunset tonight go outside and look straight up. The way our bodies are built causes most of us to think we are looking overhead when we are only gazing three-quarters of the way up. You can check your accuracy tonight because the bright star Vega is almost exactly overhead an hour after sundown.

Sunday, September 10

Jupiter and Saturn rise in the ENE about 3 hours after sunset. Saturn is first to break the horizon, followed by Jupiter a half hour later. By dawn the two planets are found high in the SE above the constellation Orion, among the stars of Taurus. Don't confuse the bright star Aldebaran with the planets. It sits 5 degrees (a half-fist width) to the lower right of Jupiter.

Monday, September 11

Arcturus is the bright star one-third of the way up in the west an hour after sunset. It is one of the Sun's nearer neighbors in space, located at a distance of 37 light years. Arcturus is currently approaching the solar system but has nearly reached its minimum distance from us. In a few thousand years the star will appear to be receding. In 500,000 years Arcturus it will be far enough away to be invisible to the unaided eye.

Tuesday, September 12

Saturn begins retrograde motion today. The planet's normal orbital motion carries it slowly eastward against the background stars. For four months each year, however, Saturn will appear to move westward, or retrograde, with respect to the stars. The motion is an illusion. As the faster moving Earth overtakes Saturn, the ringed planet appears to "back up" as seen from our vantage point. Jupiter starts retrograde September 29.

Wednesday, September 13

The Moon is Full at 3:37 p.m. EDT today. September's Full Moon is traditionally called the "Harvest Moon" because the Moon rises in twilight, only slightly later each night, for several nights. Bright moonlight, therefore, extends the time during which the farmers can see well enough to gather the crops. It has little use to most of us when we gather our crops from the supermarket.

Thursday, September 14

Tomorrow morning an hour before sunrise look for Mars and Regulus just to the north of east. They are barely a fist width (10 degrees) above the horizon, separated by a degree. Can you guess which is the planet and which the star? Take a good look. Mars is slightly fainter and redder than Regulus. Answer will appear tomorrow.

Friday, September 15

If you observed Mars and Regulus this morning, low in the east, Mars was to the upper left of the star. They will appear even closer over the next two mornings, and the relative motion of the two bodies

will be obvious. Mars slides past Regulus on the left, and then they continue to separate, with Mars to the lower left of Regulus.

Saturday, September 16

If you have a flat western horizon look for Venus very low in the WSW 30 to 45 minutes after sunset. Use binoculars to assist in initially locating the planet, then sight it with unaided eye. The bright star Spica is 4 degrees to Venus' left but will require binoculars. From southern states it may be possible to spot Mercury 6 degrees to the lower right of Venus.

Sunday, September 17

Try to catch the bright star Capella while it's still low in the sky, just after rising. Look in the NNE about 2 hours after sunset. Examine the star carefully for color. Capella is normally considered a yellow star, similar to our Sun. But when it is very low in the sky you may see it flash any of the hues of the rainbow. Stare at the star with binoculars to enhance the effect. The colors are created as the starlight passes through our atmosphere, which acts like a prism.

Monday, September 18

Tonight after moonrise, about 4 hours after sunset, the waning gibbous Moon can be found between Jupiter and Saturn, below and clearly closer to Saturn. If you look tomorrow morning before sunrise, the Moon is more evenly positioned between the two planets; its orbital motion during the night is evident.

Tuesday, September 19

The Moon rises in the ENE nearly 4 hours after sunset tonight. A number of noteworthy objects are clustered near the Moon. The bright starlike object 6 degrees (half-a-fist width) above the Moon is Jupiter. Ten degrees to the giant planet's upper right sits Saturn. Aldebaran, the brightest star in Taurus, the Bull, is 10 degrees to Jupiter's lower right. The beautiful Pleiades star cluster is 7 degrees to Saturn's upper left.

Wednesday, September 20

The Moon turns Last Quarter at 9:28 p.m. EDT and rises within 5 hours after sunset. At sunrise tomorrow the Moon will be high in the south, and by midday it will be sliding down the western sky. The Moon begins the final quarter of its orbit around Earth.

Thursday, September 21

An hour before sunrise tomorrow morning the crescent Moon stands to the right of the Gemini Twins. Pollux, the more luminous of the brothers, is 7 degrees to the Moon's left. Castor, only slightly fainter, is to the upper left of Pollux. Much lower in the east you can find Mars with Regulus, the heart of Leo, 4 degrees above the Red Planet.

Friday, September 22

The Autumnal Equinox occurs at 1:27 p.m. EDT, and fall officially begins for the northern hemisphere. That instant marks the passage of the Sun overhead at the Earth's equator just off the coast of Ecuador. Folklore suggests you can balance an egg on end at the equinoxes. It's true, with patience you can. It is equally true for any other day of the year.

Saturday, September 23

With the Moon out of the way in the evening, now is a good time to seek out the fainter constellations and objects. After dark look in the east about half way up and see if you can find four intermediately bright stars in the form of a large square, about 15 degrees (1 1/2 fist widths) on a side. When looking due east the square is rotated into a diamond shape. You've found the Great Square of Pegasus, a favorite autumn constellation.

Sunday, September 24

Once you can reliably locate the Great Square of Pegasus, you may wish to try for the Andromeda Galaxy. Facing east, think of the Square as a baseball diamond with home plate at top. Draw a line from third base to first and extend the line its own length beyond first base. You are looking for a dim hazy patch. Use binoculars to help zero in on the object. Under clear, dark skies it should be visible to unaided eye.

Monday, September 25

The Moon is a thinning crescent on its way to New Moon in two days. This morning an hour before sunrise the Moon appears between Mars and Regulus low in the east. Tomorrow morning at the same time the wisp of a moon will be below those two bodies, just barely above the horizon and slightly to the north of east.

Tuesday, September 26

After dark look in the NE half way up for five stars in the form of a "W." The figure is rotated counterclockwise a bit, and the left end is slightly flattened. The pattern is known as Cassiopeia, the Queen. Scan below the left side of Cassiopeia with your binoculars for two hazy concentrations of faint stars. You've found the Double Cluster, two loose groups of stars that are a favorite target of amateur stargazers.

Wednesday, September 27

New Moon occurs at 3:53 p.m. EDT, marking the beginning of a new lunar month. Calendars based on the Moon are still in use by some groups. Special observances are often based on the first sighting of the crescent Moon after New. The Jewish calendar derives from an ancient lunar calendar. Rosh Hashanah, the Jewish New Year, begins at sundown in two days, corresponding to the "first sighting" of the young Moon.

Thursday, September 28

The Milky Way can be viewed tonight without interference from moonlight. In early evening the band of light, which marks the disk of our home galaxy, flows from the SSW to the NNE. You must get

away from street lights to have any hope of seeing it. The darker the sky, the more majestic the show. Unaided eye and binoculars are the observing tools of choice.

Friday, September 29

If you have yet to find Venus, this evening presents the perfect opportunity. The young Moon is close by to point the way. Begin looking in the WSW 30 minutes after sunset (south of where the Sun sets). Use binoculars to aid in finding the thin crescent, then swing about a binocular field-of-view to the Moon's lower left. The only starlike object there is Venus. For a real challenge, try to bag fainter Mercury, 7 degrees below the Moon and 5 degrees to the lower left of Venus.

Saturday, September 30

The Moon is easy tonight. Forty-five minutes after sundown the Moon is 10 degrees (one fist width) above the horizon between the WSW and SW. Venus is 10 degrees to the Moon's lower right. If you want to see Mercury, to the lower right of Venus, you must look earlier. Mercury sets at this time.

*Please send any comments, suggestions, or questions to
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