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Astronomy Bulletin - The 1991 Spring Sky

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THE 1991 SPRING SKY
April and May 1991

Figure 1: This view is facing west on April 20 at about 10:30 p.m. The constellations shown are Cnc=Cancer, CMi=Canis Minor, Gem=Gemini, Aur=Auriga, Per=Perseus, Tau=Taurus and Ori=Orion. On this night, one can seen a nice alignment of celestial objects. Starting in the upper left-hand corner of the diagram, *Jupiter* is the bright object in Cancer. The Moon is only 9.5° from Jupiter. The phase of the Moon is first quarter and it is illuminated approximately 46 percent. To the lower-right (16°) of the Moon is *Mars*. Continuing down, 30° from Mars, near the horizon is *Venus*. Venus is only about 10° above the horizon, but it is bright and may be visible if there are no clouds and the horizon is not obstructed. This alignment may make an interesting photograph. A normal 50mm lens on a 35mm camera will allow you to catch Jupiter, the Moon and Mars on the same photograph.

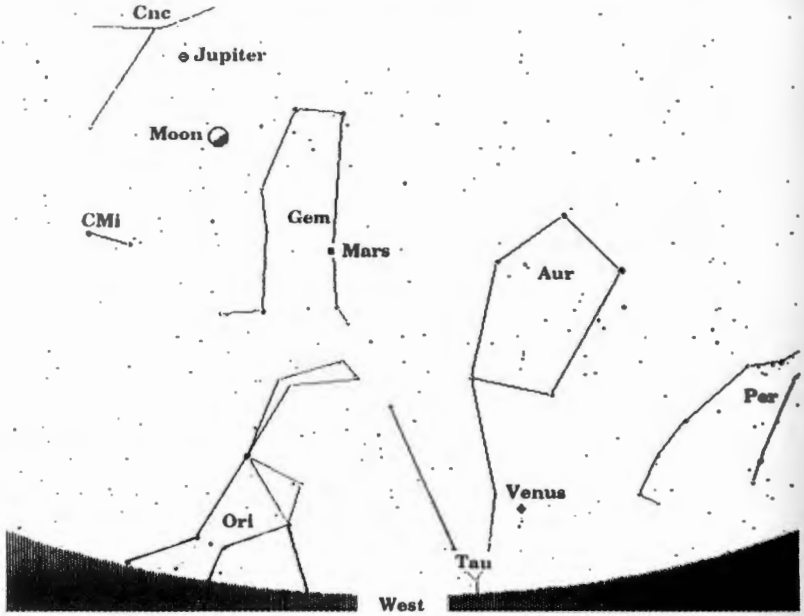

Figure 1
April 20, 1991
10:30 p.m.

Figure 2: This is the sky as seen when facing east on April 21 at about 1 a.m. The four constellations shown are Her=Hercules, Lyr=Lyra, Cyg=Cygnus and Aql=Aquila. On this night, it may be possible to see meteors from the Lyrid meteor shower. The meteors will appear to originate from just to the right of the constellation Lyra. This annual shower produces approximately 12 visible meteors per hour. Also, on this night, the Moon is low and in the west and, as the night progresses, it should not be a hindrance to meteor observation.

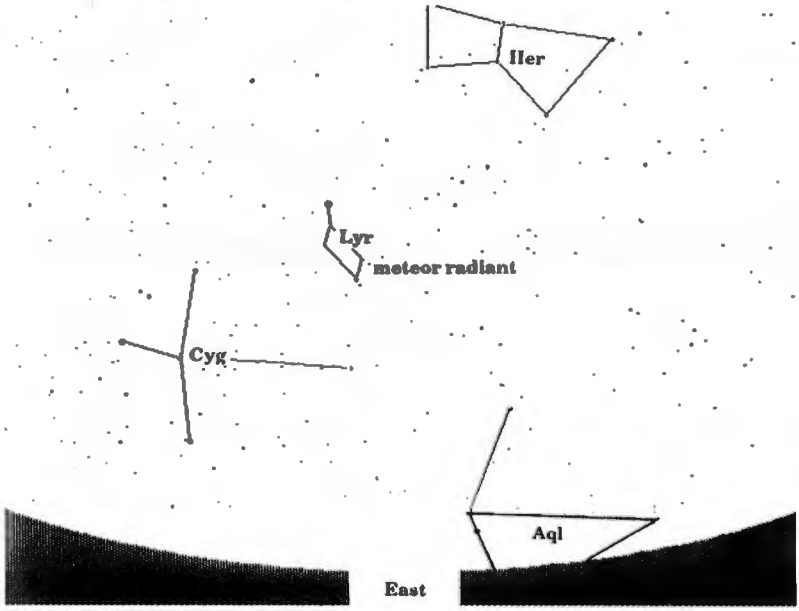

Figure 2
April 21, 1991
1:00 a.m.

Figure 3: This is the sky facing southeast on May 4 at about 4 a.m. The five constellations shown are Cap=Capricornus, Aqr=Aquarius, Aql=Aquila, CrA=Corona Australis and Sgr=Sagittarius. The Moon is illuminated 75 percent. *Uranus* is a little too dim to be seen with the unaided eye, but it can be seen with a pair of binoculars. It will look like a star, but if you observe it over a period of several months, you will be able to detect its motion among the background stars. *Saturn* is located in Capricornus and one may see its rings by using a small telescope. Also on this night, it is possible to see meteors from the Aquarid meteor shower. The meteors will appear to originate from the constellation Aquarius. This annual shower usually produces approximately 20 visible meteors per hour. Unfortunately, the bright moon will make it difficult to see all but the brightest meteors.

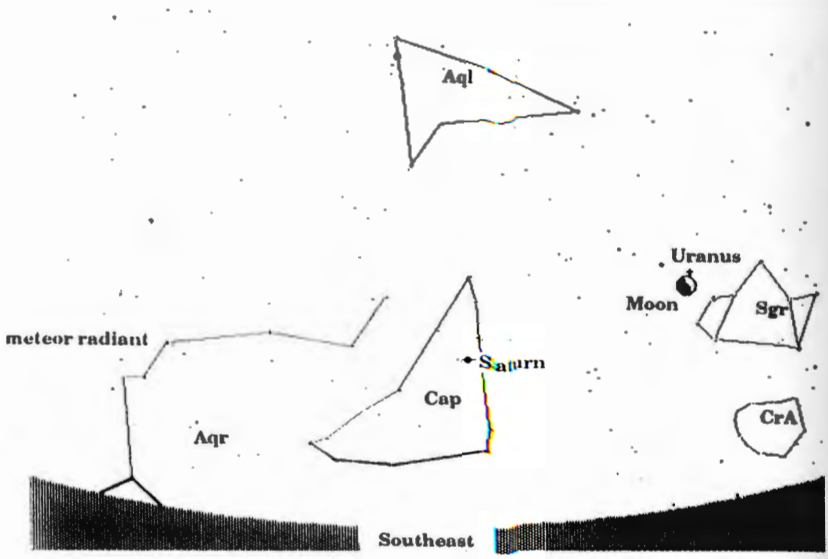

Figure 3

May 4, 1991

4:00 a.m.

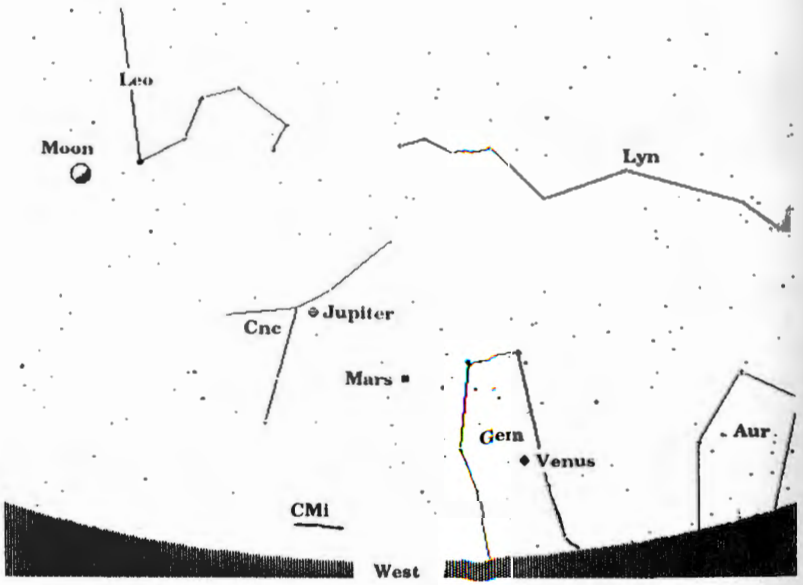

Figure 4

May 20, 1991

11:00 p.m.

Figure 4: This is the sky seen by a person facing west on May 20 at about 11 p.m. The six constellations shown are Leo, Cnc=Cancer, Lyn=Lynx, CMi=Canis Minor, Aug=Auriga and Gem=Gemini. On this night, there is another interesting alignment formed by the Moon and three planets. The Moon is in the first quarter phase and is illuminated 54 percent. *Jupiter* remains in Cancer. *Mars* is 11° to the lower-right of Jupiter. *Venus* is the bright object 14° to the lower right of Mars. Venus may be difficult to see as it is only about 10° above the horizon at this time.

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Astronomy Resources

Here are two brief demonstrations that I find useful in teaching planetary astronomy. The latter was inspired by a segment on the *Nova* series of public television programs, which is always a sources of ideas for visually presenting science.

Until the twentieth century, very few physical properties of the other planets in our Solar System were observable from the Earth. One of them was rotation rate. A spinning billiard ball very nicely represents a turning solid planet.

I ask introductory astronomy students to determine the length of the day for a "pool-table planet." Very quickly, they realize that by counting during a known interval of time, the appearances (or disappearances) of a feature on the billiard ball "planet" (in this case the number on the ball) they can determine the rotation period (Figure 1).

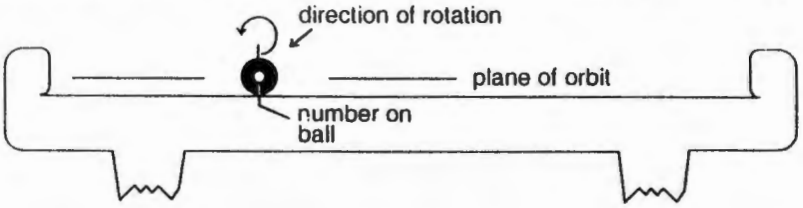

Figure 1

As a second exercise, the problem of finding the length of the day on Venus is presented. The white cue ball credibly represents the white, featureless disk of that planet. When the cue ball is spun, the students are unable to determine a frequency of rotation as they have no reference feature. The rotation rate becomes much more difficult to estimate. I then discuss radar as a means of "seeing" features on an