And not so suddenly it's summer — June 21st

SKY WATCH

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It will be easy to identify Saturn on the morning of the 10th; it will be located five degrees below the moon in Capricornus. This is the most-distant of the five naked-eye planets that is easily visible. Saturn, which has been slowly drifting eastward through the stars, will be stationary on the 11th, then will begin retrograde (backward) motion.

During the next four months, it will move seven degrees to the west (right) of its present position. Retrograde motion is an optical illusion, caused when the faster-moving earth overtakes a slower moving planet.

The moon will be at last quarter phase at 1:38 a.m. on June 12. It will appear half-lighted, but it will be starting the last-quarter of its orbit around the earth, hence the name "last quarter moon."

Have a look at Mars on the evening of the 13th. It will be three degrees closer to Regulus than it was on the 8th. The two objects, one red the other blue-white, will provide a nice display in nine more days.

The star seven degrees above Mercury on the evening of the 14th, is Pollux (PAWL lux), one of the "twin" stars. If you've been having trouble spotting Mercury, locate Pollux and look 14 moon diameters straight down. To the right of Pollux is the other "twin," Castor.

The two stars mark the constellation of Gemini.

The moon and Venus will form a nice grouping on the mornings of the 15th and 16th. The moon will be 10 degrees above Venus on the 15th and five degrees to the left of Venus on the 16th. On the morning of the 17th the waning (fading) crescent moon will be approaching the Pleiades (PLEE a dees) star cluster, the "shoulder" of Taurus the bull.

Mercury will be at its maximum elongation east of the sun on the evening of the 17th. Located 25 degrees to the right of the sun, the planet is still well placed for spotting.

New moon will be at 9:52 p.m. on June 19. The moon will be located between the earth and the sun and will not be visible.

Summer officially arrives on Monday, June 21, at 5 a.m. Eastern Daylight Time. On this day the sun will be rising at its farthest point north of east, have its highest altitude in the sky, and set at its farthest point north of west for the entire year.

The sun appears in different parts of the sky at different times of the year. Remember where the sun was rising back in December? It was rising far south of east and setting south of west. The days were short and cold and we had winter. The difference in the sun's position is not due to any movement on the part of the sun. Instead it's due to the tilt of Earth's axis of rotation.

We orbit around the sun, but our axis is tilted 23.5 degrees. It just happens to be pointing toward a star named Polaris, the North Star. In summer, when the North Pole of the earth is pointed toward Polaris, it is tilted 23.5 degrees toward the sun as well. Six months later the earth is on the opposite side of the sun. The North Pole is still aimed toward Polaris, but now it tilts 23.5 degrees away from the sun. Therefore the sun appears in a different part of the sky.

The moment when the earth reaches the point in its orbit, where the North Pole is at the greatest tilt toward the sun, is the exact moment of summer. At least it is for the Northern Hemisphere. When the North Pole is tilted toward the sun, the South Pole is tilted away from it. We may be enjoying the start of summer, but for people south of the equator the days are short and cold and it's the start of winter.

If it were not for the tilt of Earth there would be no change of seasons. If the earth's axis was straight up and down, everyone would have March-type weather year-round. That may not be bad if you live in the tropics, but it's not so great in Michigan!

The moon is finally located near Mercury on the evening of the 21st. The moon will be four degrees below and to the left of Mercury, so if the horizon is clear enough to see the moon, it should be possible to see Mercury as well. Unfortunately, Mercury will have lost much of the brightness it had at the beginning of the month.

Mars has its close conjunction (grouping) with Regulus on the evening of the 22nd. Mars will be 0.7 degree above the star. A telescope or binoculars that are slightly out of focus will make the color of these two objects more apparent. Now, watch the distance between the two objects begin to increase from night to night.

The moon gets into the act on the evening of the 23rd; it will be eight degrees below Regulus. On the following evening, the moon will be 11 degrees to the left of the pair.

First quarter moon will occur at 6:43 p.m. on June 26. The moon, having completed the first-quarter of its orbit around the earth, will look half-lighted once again. The bright star six degrees above the moon will be Jupiter. Mars will pass Jupiter in September.

On the evening of the 27th, the moon will be approaching Spica (SPY ka) in Virgo. This star is also blue-white in color, like Regulus, but it is the 16th brightest in the sky; Regulus is 21st brightest.

As promised earlier in the month, the moon will be approaching the star Antares once again on the evening of the 30th. Look toward the south southwest and you will find the moon six degrees above and to the right of the star.

An excellent aid for learning constellations and keeping up to date with the sky is the monthly Sky Calendar. A one-year subscription is $6 and is available from the Abrams Planetarium; Michigan State University, East Lansing, 48824.

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