

THE PANORAMA OF THE SKY

Changes in the Positions of the Planets Which Will Take Place in April.

COMING OF THE EASTER MOON.

Winter Constellations Decline in the West, and Less Brilliant Ones Suc- ceed Them—Phenomenon of the Zodiacal Light.

While April is rather a quiet month, astronomically speaking, it contains a great gift for all churchgoers in the full moon that occurs on the 16th. It is the first full moon following the vernal equinox, and it determines, according to ecclesiastical usage, that Easter shall fall on the following Sunday, the 18th, in this case. As this festival is the most ancient and important of all the movable feasts of the Christian Church, it determines all the other movable feasts and fasts. The full moon on the 16th is therefore the pivot on which Easter turns, and indirectly the regulator of the movable feasts and fasts of 1897. Thus, our satellite, if it be a dead world, has no insignificant mission to perform in terrestrial affairs. Happiness or misery may hinge upon the advent of the Easter moon, for events innumerable are regulated by the fall of the great festival, and a difference of thirty-three days—the extreme point of its occurrence—may exert a mighty influence on human destiny. Countless marriages wait for its coming, countless merrymakings celebrate its return, and a month sooner or later in time may change the experience of a life. If all the events that are influenced by the fact that this special moon reached the full on the 16th could be written, it would make a chapter in history of the most exciting interest.

Easter can never occur before March 22 or after April 25. The festival comes quite late this year, and every form of rejoicing that human ingenuity can devise will harmonize with the earth in verdure clad, with the blossoming trees, and the bright-hued flowers, in symbolizing the resurrection from death and the grave on which our hopes of immortality are founded.

Prominent Heavenly Visitors.

The month of April marks the decline of the brilliant Winter constellations in the west, and the ascending of the less marked Spring groups in the east. The first-magnitude stars visible in the evening are Sirius, low in the southwest; Betelgense and Rigel, low in the west, the former the ruddy star above the belt of Orion, and the latter the white star below it; Aldebaran, the ruddy star a little farther north, in the V-shaped group called the Hyades; Capella, the brilliant white star in the northwest; Pollux, which, with the fainter star, Castor, just north of it, forms the characteristic pair of the Gemini; Procyon, the bright white star between Castor and Pollux and Sirius; Regulus, near the meridian, south of the zenith, and at the end of the handle of the sickle; Arcturus, high in the northwest, and always to be found by following the curve in the handle of the dipper; Spica, low in the east-southeast.

The morning stars for April are Mercury, for the first day of the month only; Venus after the 28th of the month, and Neptune; while the evening stars, classed as such on account of their rising before midnight, the others rising after that hour, are Jupiter, Saturn, Mars, and Uranus.

The sun is advancing rapidly northward, and will be 15 degrees north of the equator at the end of the month; so that we shall surely have the astronomical certainties, upon which the changing seasons depend, changing faith to sight as the Spring advances. On the 1st the sun rises at 5:43 and sets at 6:25, while on the 30th it rises at 4:56 and sets at 6:58, thereby increasing the length of the day one hour and twenty minutes, forty-seven seconds of which are in the morning and thirty-three minutes in the evening. The April new moon comes in on the 1st, quarters on the 10th, is full on the 17th, and last quarter the 23d.

The Zodiacal Light.

At sunset about this time of the year, should the air be clear, there is occasionally to be seen something like a luminous spire or pyramid resting upon that part of the horizon beneath which the sun is buried. This column, when viewed in this latitude, is not quite perpendicular to the horizon, and lies about in the line of the Zodiac, from which it derives its name, Zodiacal light, given it more than three hundred years ago. A theory was at one time entertained, based on observations taken in the tropics, that this strange effulgence was a luminous appendage encircling the earth somewhat as Saturn has its rings; but the older theory, which connected it more immediately with the sun, has stood the test of recent observations. The faint, yet exquisite, lustre has so far proved amenable to optical tests that the spectrum has revealed its identity with the solar radiance. The light is sunlight, and only differs from the latter in its intensity. It is, therefore, due to reflection, and, whatever may be the nature of the material which thus reflects the sunlight, we at once get rid of the notion that the Zodiacal light is a mere extension of the sun's atmosphere.

It would be presumptuous to say that the enigma of this radiance has been fully solved. Perhaps, at present, it has hardly received the amount of attention which it deserves at the hands of scientists. It is an occasional phenomenon reared in that part of the sky bathed in the strongest twilight, and with its hazy lustre and almost indefinable form, has somewhat the character of a celestial phantom. Yet, despite the apparent faintness of its radiance, the real amount of light must be considerable. One thing the heavens seem to tell with greater emphasis from year to year—that space is not so void and empty as it was once thought to be, and that structures comparatively minute, as well as the immensely large, are widely spread amid the framework of the universe.

Venus, Jupiter, and Mercury.

Venus during March has moved almost one hour in time nearer the sun than she was at the close of February, and is now separated a little more than two hours from the centre of the solar system. So rapid, however, do her movements become that this whole interval is overcome in the course of four weeks, and on the 28th the planet is in conjunction with the sun, and reappears on his other side as a morning star. We have had her fair face so much in evidence during the clear Winter evenings that it has quite grown upon us, and almost induced the belief that she is a permanent part of the evening tableau. What is worse, her face will be growing smaller from the time she says her adieu to the evening sky until it, at the close of the year, will measure only about a sixth of what we now have it, and meagre though that be, we shall only be permitted to gaze at it in the hours just before the dawn.

Jupiter has now his chance of the year, and is bending all his mighty forces to oust fair Venus from her realm, and supplant her in the affections and estimation of the stargazers, but he was at his largest for the year when a few weeks ago he was in opposition with the sun. His disk will continue to dwindle away until November, when he will once again begin to increase. But long before that time he will have passed from an evening to a morning star, ready to fight again the battle for supremacy with Venus.

The rapidly changing Mercury begins the month by being in conjunction with the sun on the way toward the eastern terminus of his swing, and even the sharpest-eyed cannot find him until toward the month's close, so much is he overshadowed by the brilliant rays of the sun. When the planet, in moving about in its orbit, comes to its closest proximity to the sun, midsummer occurs everywhere on his surface at the same time, for its orbit departs so much from a circle that the variations in its distance from the sun are the controlling element in causing the seasons.

Neptune, Mars, and Saturn.

Neptune is slowly moving toward his point of conjunction with the sun, a position he will reach early in June. The planet is now in 5 hours 8 minutes north ascension, and 21 degrees 37 minutes north dec-

lination, which places him in the constellation of the Bull. On the 7th Neptune and the moon are in conjunction, but the amount of clear sky between the two is so great that Luna hardly serves to definitely locate the position of this namesake of the God of the Ocean.

Mars, on the 9th, is occulted by the moon, and it is the only event of the kind for the month in which planet and moon figure so conspicuously. The day previous Mars and one of the stars in the Twin group will look as though they touched each other, so the progress of the planet for the interval will be interesting to watch. Pollux is the one of the Twins which Mars will be the closer to, so by observing its position one may be able in the future to distinguish Castor from its fellow. Then, too, we perhaps can remember that Castor is the more northerly of the two.

The beautiful planet Saturn shines with its peaceful light in the group of the Scorpion, and is moving on toward opposition with the sun. Saturn changes but little now in size and brilliant appearance, but one of these days he will once again become a very prominent object for us to admire.

The faint planet Uranus passes our meridian not far from the time Saturn gets there, and can be seen through a telescope, where it has the appearance of a small star. Its disk is not well defined with a telescope smaller than eight or ten inches aperture, and in the most powerful instruments it is a disappointing object, showing faint and well-nigh illusory markings.