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COLURE. The great circle passing through the North Pole of the Equator and through the equinoctial points is called the Equinoctial Colure. The great circle through the North Pole and the solstices is the Solstitial Colure, 85.

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CONJUNCTION. Two planets are said to be in conjunction when their heliocentric longitudes are the same, 407.

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CONSTANT OF ABERRATION. If the eccentricity of the earth's orbit be neglected the constant of aberration is the angle whose circular measure is the ratio of the velocity of the Earth in its orbit to the velocity of light. The value of the constant of aberration when the eccentricity is not deemed negligible is given in Ex. 3, 261.

Constellations. For convenience of reference the stars are arranged into groups of which each has received a name which applies generally to the region which the group occupies. The stars in the group are distinguished in order of brightness as α , β , &c. Thus the three brightest stars in Orion are known as α Orionis, β Orionis, γ Orionis. The constellations through which the sun passes in its apparent annual motion are called the signs of the Zodiac.

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CULMINATION, upper and lower. At apparent noon when the Sun is at its highest point above the horizon it is said to be in upper culmination. At midnight when the sun is at its lowest point below the horizon the sun is in lower culmination. In general a star or other celestial body culminates when it crosses the meridian either above or below the horizon, 75-6. Of a planet, 99. Of the moon, 100. Effect of longitude on, 101.

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EPOCH. That element of a planet's orbit which expresses the time at which the planet passes through perihelion, 408.

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EQUATOR. The celestial equator is that great circle of the celestial sphere which is at right angles to the earth's axis. It is sometimes called the equinoctial. The terrestrial equator is the intersection of the earth's surface by a plane through the earth's centre and perpendicular to the earth's axis, 74.

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Equinoctial points. The two opposite points in which the ecliptic intersects the equator are called the Equinoctial points; they are the nodes of the ecliptic upon the Equator. The node at which the Sun passes from the south to the north side of the Equator is the Vernal Equinoctial point or First Point of Aries. The other node is the Autumnal Equinoctial point or the first point of Libra, 84.

Equinox. This word denotes an Epoch at which the sun appears to pass through one of the equinoctial points. The Vernal Equinox when the Sun enters the First Point of Aries in 1911 is Mar. 21 d. 5 h. 54 m. and the Autumnal Equinox when the Sun enters the First Point of Libra is Sep. 23 d. 16 h. 18 m.

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Gibbous. A term used to describe the phase of a planet when more than half its disc is illuminated. The planet is said to be horned when less than half its disc is illuminated, 424.

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GREAT CIRCLE. A great circle on a sphere is a circle whose plane passes through the centre of the sphere. Any circle whose plane does not pass through the centre is called a small circle.

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Horizon. A plane perpendicular to a plumb line at a point on the surface of the Earth is the sensible horizon of the point. A plane parallel to the sensible horizon and drawn through the Earth's centre is the rational horizon. As the Earth's radius is inappreciable in comparison with the distances of the stars the sensible and rational horizons of a point intersect in a great circle on the celestial sphere which is known as the celestial horizon, 72.

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Hour angle. The angle which the hour circle from the north pole to a star makes with the meridian is called the hour angle of the star. At upper culmination

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Latitude. The astronomical or geographical latitude of a place on the Earth's surface is the angle between the Plumb Line and the plane of the Equator. Geocentric latitude is the angle between the radius from the Earth's centre to the place of the observer and the plane of the meridian. If the Earth be regarded as a sphere the astronomical and geocentric latitudes are identical, 44, 76. The celestial latitude of a star is the arc > 90° of the celestial sphere drawn from the place of the star perpendicular to the Ecliptic, 106.

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LONGITUDE (terrestrial). The longitude of a place on the Earth's surface is the angle which its meridian plane makes with a selected zero meridian which is generally taken to be that of Greenwich, 222.

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LOXODROME. Assuming the earth to be a sphere a curve traced on its surface so as to make a constant angle with all successive meridians is called a loxodrome or rhumb-line, 57.

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MERIDIAN. The great circle of the celestial sphere which passes through the pole and the zenith of the observer cuts the celestial sphere in the celestial meridian. The plane of this great circle cuts the earth in the terrestrial meridian, 75.

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Node. The points in which any great circle cuts another (taken as the circle of reference) are called the nodes of the former. Of these two points, that at which a point, moving around the great circle in the positive direction, passes from the negative to the positive side of the reference circle is the ascending node. The opposite point is the descending node, 33. Of a planetary orbit, 407. Closest approach of sun and moon at a node, 364. See Ascending node.

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NUTATION. The nutation in longitude is the periodical part of the movement of the equinoctial points along the ecliptic. The nutation in obliquity is the periodic change in the obliquity of the ecliptic, 185. See Precession.

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Parallax. Parallax is the change in the apparent direction of a celestial body as seen from two different points of view. Geocentric parallax is the angle between the actual direction of the object as viewed from a place on the surface of the earth and the direction in which it would appear if it could be seen from the centre of the earth. Annual parallax is the angle between the direction in which a star appears as seen from the earth and the direction in which it would appear if it could be observed from the centre of the sun, 277. Fundamental equation for finding the parallax



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PERIGEE AND APOGEE are the points in the orbit of the moon and the apparent orbit of the sun when the celestial body is respectively at its least or greatest distance from the earth, 154.

PERIHELION is the point of a planetary orbit when the planet is nearest the Sun. Aphelion is the point at which the planet is farthest from the Sun, 408. Longitude of perihelion, 408.

Periodic time. The periodic time of a planet, satellite, comet, or component of a double star, is the period in which the body completes an entire circuit of its primary, 146.

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POLAR DISTANCE. The arc of a great circle between a star and the pole is the polar distance of the Star, 82.

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Poles (celestial). A line through any point of the earth parallel to the earth's axis intersects the celestial sphere in the two points known as the north and south celestial poles. In the diurnal motion each star appears to revolve in a circle about the poles, 73.

Poles (terrestrial). The north and south terrestrial poles are the points in which the axis of the earth intersects the earth's surface, 44.

Position angle. The position angle of a double star is the angle between the arc drawn from the principal star to the pole and the arc joining the secondary star to the principal star measured from the former anti-clockwise, 138.

PRECESSION OF THE EQUINOXES. By the precession of the equinoxes is meant the slow secular movement of the equinoctial points along the ecliptic in the opposite direction to increasing longitudes. Precession is due to the spheroidal form of the Earth and to the fact that the resultant attraction of the



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PRIME VERTICAL. On the celestial sphere the prime vertical is the great circle which passes through the zenith and is perpendicular to the meridian. It cuts the horizon in the East and West points, 77.

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Refraction (Astronomical). Refraction is an effect of the earth's atmosphere on light passing through it, in virtue of which the rays do not generally pass through the atmosphere in straight lines but are bent towards the surface of the earth, so that a star appears displaced towards the zenith of the observer, 116. Determination from observations, 131. Effect on apparent distance, 135. Horizontal, law of, 127. Integration of differential equation, 124. Effect on position angle, 138. Effect of pressure and temperature, 131. Table of, 120.

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Solstices. The points on the ecliptic in longitude 90° and 270° are called the Summer and Winter Solstices respectively, from the fact that when the Sun is near these points of its orbit its declination is almost stationary, 85.

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Zenith. A line perpendicular to the surface of standing water is called a plumb line. If continued upwards it meets the celestial sphere in the zenith and produced downwards it meets the celestial sphere in the nadir. The Zenith is the antinole of the horizon when graduated for reading azimuths, 72.

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CAMBRIDGE: PRINTED BY JOHN CLAY, M.A. AT THE UNIVERSITY PRESS.