GEODETIC ASTRONOMY AND INTRODUCTION TO SATELLITE GEODESY

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Geodetic Astronomy: Celestial Sphere, Definition of terms in Astronomy, Solution of Astronomical Triangle Celestial coordinate systems and their inter-transformations Variation in Celestial Coordinates: Precession, Nutation, Polar Motion, Physical effects and Proper motion Time Systems: Solar, Sidereal, Ephemerides, Atomic and Rotational Time Systems: UT0, UT1, UT2 and UTC, Polar Motion CIO, Earth Rotation, Leap Second, Determination of Astronomic Azimuth, Latitude and Longitude. Satellite Geodesy: Introduction to Satellite Geodesy, Keplerian Laws of satellite motion, Geometry of Ellipse and Keplerian ellipse in Space, Transformation of Coordinates from Keplerian elements to Earth Centered Earth Fixed (ECEF) coordinate system, Perturbed satellite motion, Lagrangian and Gaussian forms of Perturbation equations, Gravitational and non-gravitational perturbing forces, Introduction to GNSS, SLR, VLBI and Satellite altimetry, Geodetic applications of satellite missions