

## Quiz 1 Study Guide

Astronomy 161 -- Autumn 2007  
Quiz 1 Study Guide

### Unit 1: Introduction

#### Astronomical Numbers

- Scientific Notation
- Metric system
- Weight vs. Mass

#### The Night Sky

- The Constellations
- Uses for ritual, navigation and art

### Unit 2: Discovering Earth & Sky

#### Measuring the Earth

- The Spherical Earth
  - Appeal to perfect symmetry
  - Demonstrations of Aristotle
- The circumference of the Earth
  - Method of Eratosthenes
  - Ptolemy's estimate and its influence

#### Mapping Earth & Sky

- Latitude & Longitude
- The Celestial Sphere
- Celestial Poles & Equator
- Declination
- Local Horizon and Zenith

#### Daily & Annual Motions

- Motions due to Earth's Daily Rotation
- Circumpolar Stars
- Ecliptic: reflection of the Earth's Annual Orbit
- Obliquity of the Ecliptic
- Zodiacal constellations
- Solstices & Equinoxes

#### The Four Seasons

- Due to the tilt of the Earth's Axis
- Influence of insolation and the length of the day
- Precession of the Equinoxes

#### The Phases of the Moon

- Synchronous rotation
- Main Phases of the Moon
- Moonrise & Moonset times at the different Moon phases
- Sidereal & Synodic Periods of the Moon

#### Eclipses of the Sun & Moon

- Umbral & Penumbra shadows
- Lunar Eclipse: Sun is eclipsed by the Earth
  - Total & Partial Lunar Eclipses
- Solar Eclipse: Sun is eclipsed by the Moon
  - Total, Partial & Annular Solar Eclipses
- The Eclipse Year
  - How often do you see eclipses, and why

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### Telling Time

- Divisions of the year into months, weeks, & days
- Division of the day into hours, minutes & seconds,
- Mean Solar Time
- Sidereal Time
- Standard Time and Time Zones

### The Calendar

- Lunar, Solar, & Luni-Solar Calendars
- Julian & Gregorian Calendar Reforms
- Gregorian Leap Year rule

### Planetary Motions

#### Inferior Planets

- Inferior & Superior Conjunction
- Maximum Eastern & Western Elongation
- Times of rising/setting associated with each

#### Superior Planets

- Conjunction & Opposition
- Eastern & Western Quadrature
- Times of rising/setting associated with each

#### Retrograde Motion

- What is it, when does it occur for different planets?