

Some Astronomy History

Astronomy is using what we can observe beyond our atmosphere to understand changes in our physical environment, e.g. temperature, precipitation, sunrise, sunset, tides, seasons, and more. Early in history (and pre-history) understanding of astronomy was rare, and the ability to predict astronomical events was seen as magical or divine. The advent of agriculture (ca. 9,000 BCE) made it useful to predict the changing of seasons and plan activities using a calendar based on the motion of the Sun and Moon.

Interesting Sites



Stonehenge, England (ca. 8000 BCE)
ancient observatory?



Great Pyramids of Giza, Egypt (ca. 2500 BCE) *astronomically aligned*



Borobudur, Indonesia (ca. 825 CE)
4:6:9 cosmological height ratios



Machu Pichu, Peru (ca. 1450)
cosmological configuration

See also <<http://en.wikipedia.org/wiki/Archaeoastronomy>>

Astronomy Timeline

2300 BCE Stars named in China
750 BCE Babylonians create first almanacs, Greeks predict eclipses
270 BCE Aristarchus proposes heliocentric theory
150 CE Ptolemy endorses geocentrism, publishes star catalog, 48 constellations
400 CE Hindu *Surya Siddhanta* gives length of sidereal year
499 CE Aryabhata proposes heliocentric system of gravitation
830 CE Arabic astronomy begins
1031 Abu Rayhan Biruni suggests heliocentric motion
1054 Crab Supernova recorded by Chinese and Native Americans
1350 Ibn al-Shatir lays groundwork for Copernican theory
1500 Leonardo da Vinci writes “*Il sole no si muove*”
1543 Nicolas Copernicus’ *De revolutionibus orbium coelestium* with circular orbits
1608 Hans Lippershey invents refracting telescope
1609 Johannes Kepler announces *three laws of planetary motion* (Tycho Brahe)
1610 Galileo Galilei’s “*Starry Messenger*” sun spots, moon craters, moons of Jupiter
1668 Isaac Newton builds first reflecting telescope (Newtonian)
1687 Isaac Newton publishes the *Principia*
1781 William Herschel discovers Uranus
1784 Charles Messier catalog of “dim-fuzzy” objects
1801 Ceres (asteroid) identified by Giuseppe Piazzi and William Herschel
1846 Johann Gottfried Galle identifies Neptune (from gravitational effects on Uranus)
1895 Konstantin Tsiolkovsky proposes spaceflight mechanics
1906 Herzprung-Russell diagram
1916 Karl Schwarzschild black hole theory from general relativity
1929 Edwin Hubble discovers universe is expanding
1930 Clyde Tombaugh discovers Pluto
1932 Jan Oort discovers the presence of Dark Matter
1965 Arno Penzias and Robert Wilson discover cosmic background radiation
1974 Supermassive Black Hole Sgr A* discovered by Balick and Brown

Legacy

Timekeeping, calendars, challenges for religion and superstition, navigation solutions, telescopes, origins and cosmology. What else?

Astronomical Instruments

Sun Dial, Planetarium, Astrolabe, Armillary Sphere, Telescope, Orrery, Astronomical Clock, and the Antikythera Mechanism.