Sample Timeline

c. 2000 BC Chinese discover sunspots.

c. 1500 BC Earliest sundial in use in Egypt

c. 220 BC The first mathematically-based attempt at determining the Sun-Earth distance is due to Aristarchus of Samos

~1000AD Magnetic compass discovered in China

I can't find the timeline I saw the other day. I may have seen it before and already have the dates. I know I combined several timelines and then used the ISTP and a couple of other web sites to put it together.

I did find this information:

The north-south pointing property of the compass needle was discovered in China around the year 1000

1300 Idea that hours should be of equal length proposed by the Arab scholar, Abul-Hassan.

1543 Nicolaus Copernicus theory of heliocentric solar system published.
1544
1600 William Gilbert publishes in London "De Magnete" ("on the magnet"). Explanation of the compass: the Earth is a giant magnet.

1608 Hans Lippershey discovers principle of refracting telescope.

1609-11 Galileo Galilei uses first refracting telescope to study sunspots, discovers sun's rotation.

1609-19 Johannes Kepler's laws of planetary motion published.

1644 new model of the cosmos where the Sun is but one of many stars

1666 Sir Isaac Newton experiments with color and use of prism for spectral analysis.

1645-1715 The Maunder Minimum (not so named till the 19th C!) very few sunspots were observed. Simultaneous records indicate decrease in auroral counts. “Little Ice Age” in Europe

1687 The first quantitative estimate of the Sun's mass due to Isaac Newton

1724 George Graham in London discovers magnetic storms, seen simultaneously by Celsius in Sweden.

1800 Discovery of the sun's infrared spectrum by William Herschel.

1802 William Wollaston discovers dark lines in solar spectrum.

1814-15 Joseph von Fraunhofer maps 600 lines in solar spectrum.

1821 Hans Christian Oersted discovers electromagnetism.

1839 Invention of photography by Louis Jacques Daguerre

1842 First photography of solar spectrum by Henri Becquerel

1843 Samuel Heinrich Schwabe discovers sunspot cycle.

1851 First successful photograph of corona, at eclipse by Berkowsii CHECK NAME

1852 The sunspot cycle is linked to geomagnetic activity by Edward Sabine

1858 Daily photographic patrol of sun in white-light begun by Warren De la Rue in England.

1859 Richard Carrington discovers differential rotation of sun.

1859 Gustav Kirchhoff's laws of spectral absorption and emission (dark and bright lines) permit analysis of solar structure.

1859 First observation of a solar flare, by Richard Carrington in white light.

1861 Sporer discovers sunspots shift from higher to lower latitudes during cycle.

1868 Jules Janssen and Norman Lockyer demonstrate that prominences can be observed outside eclipse.

1869 Observations of chromospheric spicules at limb by Secchi and Respighi.

1869 Discovery of coronal emission (green line) by CharlesYoung and Harkness during eclipse.

1869 Charles Young performs spectral analysts of chromosphere.

1869 Norman Lockyer discovers yellow line in chromosphere, identifies new element, helium.

1870 Discovery of flash (chromospheric) spectrum, by Charles Young at eclipse.

1881 First measurements of the solar constant by Samuel Langley, on Mt. Whitney.

1892 George Hale invents spectroheliograph for solar photography of single spectral lines.

1902 Samuel Langley and Abbot begin systematic measurements of the solar constant.

1908 George Hale discovers magnetic fields associated with sunspots.

1933 Bernard Lyot invents coronagraph, and birefringent filter for solar observations.

1942 Observations of radio emission from the sun by military radars

1941-42 Bengt Edlen identifies "forbidden" coronal lines as heavily ionized iron, nickel, calcium argon.

1946 First far ultraviolet solar spectrum obtained by Tousey with rocket.

1952 Harold Babcock invents solar magnetograph.

1957 High resolution photographs of photospheric granulation by Martin Schwarzchild, with balloon.

1957 Sputnik 1 launched by the Soviet Union, first artificial satellite.

1958 Explorer 1, launched by the US January 31, observes the radiation belt.
Explorer 3, launched in March, produces clearer evidence for its existence.
Eugene Parker proposes theory of the solar wind.
Pioneer 3 observes the outer radiation belt.

1959 First direct measurement of solar wind by USSR spacecraft, Lunik I

1960 Discovery of solar supergranulation cells by Leighton, Noyes, and Simon.

1960-70 Development of ultra-narrow band filters permits observation of discrete spectral lines.

1960-74 Space exploration develops; observations of sun from outside earth's atmosphere now possible; extensive solar data gathered by Skylab and other projects.

1962 First orbiting solar observatory (0S0) launched.

1964 IMP-1 (Interplanetary Monitoring Platform 1) reports a large bow shock formed in the solar wind ahead of the magnetosphere, and a long magnetic tail on the night side of the Earth.

1966 First observation of corona from spacecraft, by lunar-orbiting Surveyor.

1969 Discovery of x-ray "bright points" in solar atmosphere by American Science & Engineering rocket.

1971 First observation of large-scale coronal transient disturbance in white light, by Naval Research Lab. coronograph on OSO.

1972 Pioneer 10 was the first spacecraft to travel through the Asteroid belt, and the first spacecraft to make direct observations and obtain close-up images of Jupiter. Famed as the most remote object ever made by man, Pioneer 10 is now more 7 billion miles away. The spacecraft made valuable scientific investigations in the outer regions of our solar system until the end of its mission on 31 March 1997. Pioneer 10 is headed towards the constellation of Taurus, The Bull. It will take Pioneer over 2 million years to pass by one of the stars in the constellation.

1973 First crewed orbital solar observatory (Skylab).

1973 Pioneer 11 follows its sister ship to Jupiter (1974), made the first direct observations of Saturn (1979) and studies energetic particles in the outer heliosphere. The Pioneer 11 Mission ended on 30 September 1995, when the last transmission from the spacecraft was received. Its electrical power source exhausted, the spacecraft could no longer operate any of its scientific instruments, nor point its antenna toward Earth. The spacecraft is headed toward the constellation of Aquila, The Eagle, northwest of the constellation of Sagittarius. Pioneer 11 may pass near one of the stars in that constellation in about 4 million years.

1974 NOAA begins making geosynchronous weather observations with the first GOES satellites

1977 S3-3 satellite of the U.S. Air Force observes the upward acceleration of O+ ions, related to the downward acceleration of electrons in the polar aurora.

1977 launch of Voyager 1 and 2 to extend the NASA exploration of the solar system beyond the neighborhood of the outer planets to the outer limits of the Sun's sphere of influence, and possibly beyond. This extended mission is continuing to characterize the outer solar system environment and search for the heliopause boundary, the outer limits of the Sun's magnetic field and outward flow of the solar wind. Penetration of the heliopause boundary between the solar wind and the interstellar medium will allow measurements to be made of the interstellar fields, particles and waves unaffected by the solar wind.

1981 High resolution images are obtained by Lou Frank's group in Iowa of the entire auroral zone, using the Dynamics Explorer satellite.

1983 ISEE-3 (International Sun-Earth Explorer 3) explores the distant magnetotail, before heading for comet Giacobini-Zinner.

1985 An "artificial comet" is produced by a cloud of barium ions, released by the German IRM (Ion Release Module) satellite.

1986 Viking 1 was launched and conducted a very successful magnetospheric research mission until May 12, 1987

1990 Ulysses (ESA-NASA) launched and flies by Jupiter in February, 1992, where a gravity assist maneuver places the spacecraft in a unique solar polar orbit, allowing it to fly over the south pole of the Sun in 1994 and over the north pole in 1995. The Ulysses mission explored for the first time the high latitude heliosphere away from the plane of the ecliptic.

1991 Severe solar-produced shock wave hits the magnetosphere, produces an additional (temporary) radiation belt.

1991 Launch of the “Yohkoh” (Japanese for “Sunbeam”) spacecraft, an observatory for studying X-rays and gamma-rays from the Sun. Yohkoh is a project of the Institute for Space and Astronautical Sciences. The spacecraft was built in Japan and the observing instruments have contributions from the U.S. and from the U.K.

1992 “Geotail” launched by Japan's Institute of Space and Astronautical Science (ISAS) and NASA, the satellite has roamed millions of miles in the tail of the magnetosphere to see how the solar wind and Earth interact downstream.

1993, 1994, 1995, 1997, and 1998 Spartan 201 Missions to study the Sun's corona.

1994 “Wind” spacecraft launched by NASA, the satellite spends most of its time flying into the solar wind (on the sunny side of Earth) in order to decipher its physical and chemical properties…

1995 SOHO, SOlar and Heliospheric Observatory, launched by the European Space Agency (ESA) and NASA, the satellite lives in a stationary “L-1”orbit between the Sun and Earth where it studies the structure of the Sun, its atmosphere and the origin of the solar wind.

1996 “Polar” spacecraft launched by NASA: satellite makes daily passes over Earth's north and south poles in order to study the energy and particles flowing into and out of the magnetosphere and producing the aurora.

1997 ACE, Advanced Composition Explorer, launched by NASA. Because of ACE scientists can predict that a CME will affect Earth one hour in advance giving power companies time to schedule brownouts and save major power failures.

1997 EQUATOR-S launched to study the Earth's equatorial magnetosphere out to distances of 67,000 kms

1998 TRACE (Transition Region and Coronal Explorer) spacecraft launched to explore the three-dimensional magnetic structures that emerge through the visible surface of the Sun and define geometry and dynamics of the upper solar atmosphere