

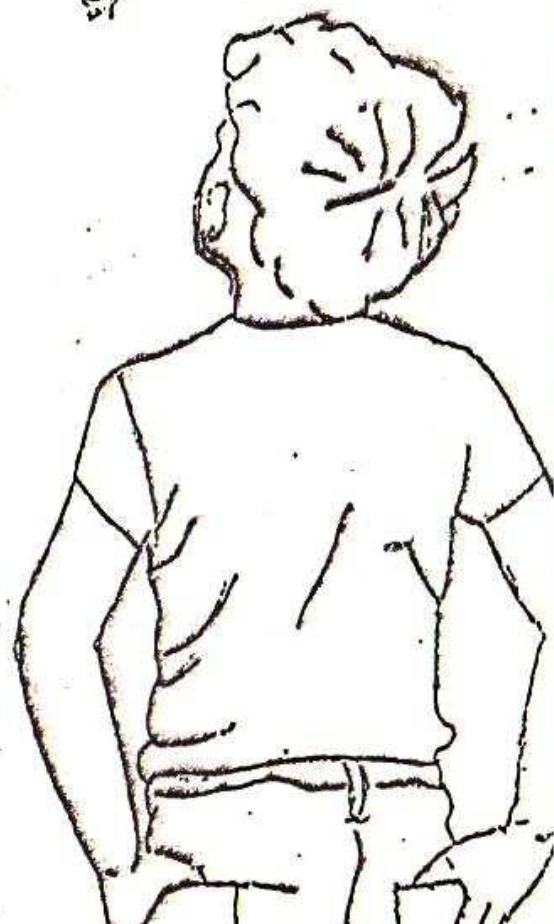
JANUARY 1982

Astronomical Society of Frankston

1982

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ASTRONOMICAL SOCIETY OF FRANKSTON
 Newsletter January 1982

J A N U A R Y M E E T I N G

The first ASF meeting for 1982 will be held on January 27, being the fourth Wednesday of the month. It will commence at 8 pm in room 16 of the State College, Frankston.

The main speaker will be John Palmer who will discuss Precession, Position and Time, and Star Recognition'

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S U B S C R I P T I O N S

These are now due. The rates were decided at the 1981 Annual General Meeting, and are listed at right. Please return the slip when you pay your subscription. This will allow us to update our mailing list.

SPACE: While the Space Shuttle and Voyager II received Publicity during 1981, Pioneer 10, launched in March 1972, continued its voyage ...

Pioneer 10 crosses its 25th AU from the Sun

FOR THE PIONEER 10 space craft, every day marks a first. Recently, the plucky unmanned space probe—now more than nine years into its space odyssey—has reached an unprecedented milestone in passing its 25th astronomical unit (AU) from the Sun.

One AU is roughly equal to 93 million miles (150 million km) about the distance from Earth to the Sun. It is considered a conventional yardstick for solar system measurements. This translates into about 2.3 billion (10^9) miles that the space craft has travelled as of July 26, with the crossing of its 25th AU.

Presently, Pioneer 10 is somewhere between the orbits of Neptune and Uranus, and has found that the Sun's atmosphere and magnetic envelope "extends an enormous distance, far beyond the point predicted by many scientists," comments James Van Allen of the Univ. of Iowa and a Pioneer project investigator.

This discovery of solar influence means that "if you were living on

any other planet, you would find a solar environment surrounding it such as that surrounding Earth. This would include: a constant solar wind, buffets by solar magnetic storms, and in many cases, radiation belts," Van Allen added.

For the miraculous journey Pioneer 10 has made, it remains in good condition. As of the passing of its 25th AU, the space craft's instruments are all in working order, except for its magnetometer, according to Peter Waller of NASA Ames Research Center, which monitors the flight of Pioneer 10.

"Pioneer 10 is still capable of performing specific experiments," Waller said, "and has been used for particles and fields studies as well as other experiments with cosmic dust."

Some of the experiments that the craft has been used for show scientists some of the conditions that Voyager 2 will encounter with its deep-space flyby of Uranus in 1986. The Pioneer 10 data have been used to forecast that Uranus, along

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CUT OUT AND RETURN

"Pioneer 10 crosses its 25th AU" continued

with Neptune and Pluto, experiences a similar "solar environment" to what Earth does, Van Allen said.

Information from *Pioneer 10* indicates that the Sun's influence extends to at least 25 AU, and probably well beyond. Scientists working to decipher *Pioneer 10* data feel there is no close approach to the heliopause—the border where the influence of the Sun ends and interstellar space begins.

Because the Sun is a star that is typical of many stars, scientists believe that the study of the Sun and its influence over the planets that orbit it could lead to many insights of the relationship of other stars and their possible planets. The only formidable barrier to finding what lies at the edge and beyond the solar system is being able to detect the signals sent to Earth from *Pioneer 10*.

With the crossing of the 25th AU, data sent back to Earth from the space craft takes about 3 hr and 30 min, racing at the speed of light, to get to Earth. With *Pioneer 10's* present rate of travel away from Earth, scientists project that they can keep in contact with it until about 1989 or 1990.

"The end of the solar system, we feel, is at the mean orbit of Pluto," says Waller. "*Pioneer 10* should reach this by November of 1986, and we should still be in contact with it at that time." □

Return subscription form (see other side) to Treasurer at January 27 meeting, or post to:

Peter Brown
7 Kiandra Crt.
Frankston 3199

Standard Post Wed. June 10, 1981

OUT & ABOUT

People



Things are looking up

AMATEUR astronomy in Frankston is looking up now that members of the Astronomical Society have completed reconditioning of their large telescope.

The instrument, known as the B. J. Smith Telescope, is a reflecting unit with a mirror 310mm in diameter.

The mirror was recently reinstalled in the telescope tube after being completely reground and silvered. Grinding was carried out by Bruce Tregaskis, secretary of the society.

This telescope will be one of a number of instruments available for use at a public viewing night on Friday, June 12 in

room 16 of Frankston State College at 8 p.m.

In the event of cloud cover preventing viewing, astronomical films will be screened.

A small charge will be made to cover costs, including supper.

Further details about the night or the society may be obtained from Stephen Wilbourne, 783 7728.

● Steve Malone and Bruce Trevaskis make last minute adjustments before Friday's public viewing.