

# Joseph Lade Pawsey: The Second Director of NRAO 1961-1962



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<http://www.nrao.edu/>



# Joseph Lade Pawsey 1908-1962

## Founder of Australian Radio Astronomy



# Pawsey- his life

- Born Ararat Victoria Australia May 14, 1908
  - University of Melbourne 1926-1929 BSc
  - Master of Science 1931
  - Given a 1851 Exhibition Scholarship to University of Cambridge – 1934 PhD working on the E layer of the ionosphere with J.A. Ratcliffe
- Then EMI in the UK for a few years before back to Australia at the start of WWII – started work 1 Feb 1940
- Radio astronomy started at the lab in Sydney 1945
- Died 30 Nov 1962

AN EXPERIMENTAL STUDY  
OF THE  
INTENSITY VARIATIONS OF DOWNCOMING WIRELESS WAVES

being a dissertation submitted for the degree of

Doctor of Philosophy

in the

University of Cambridge

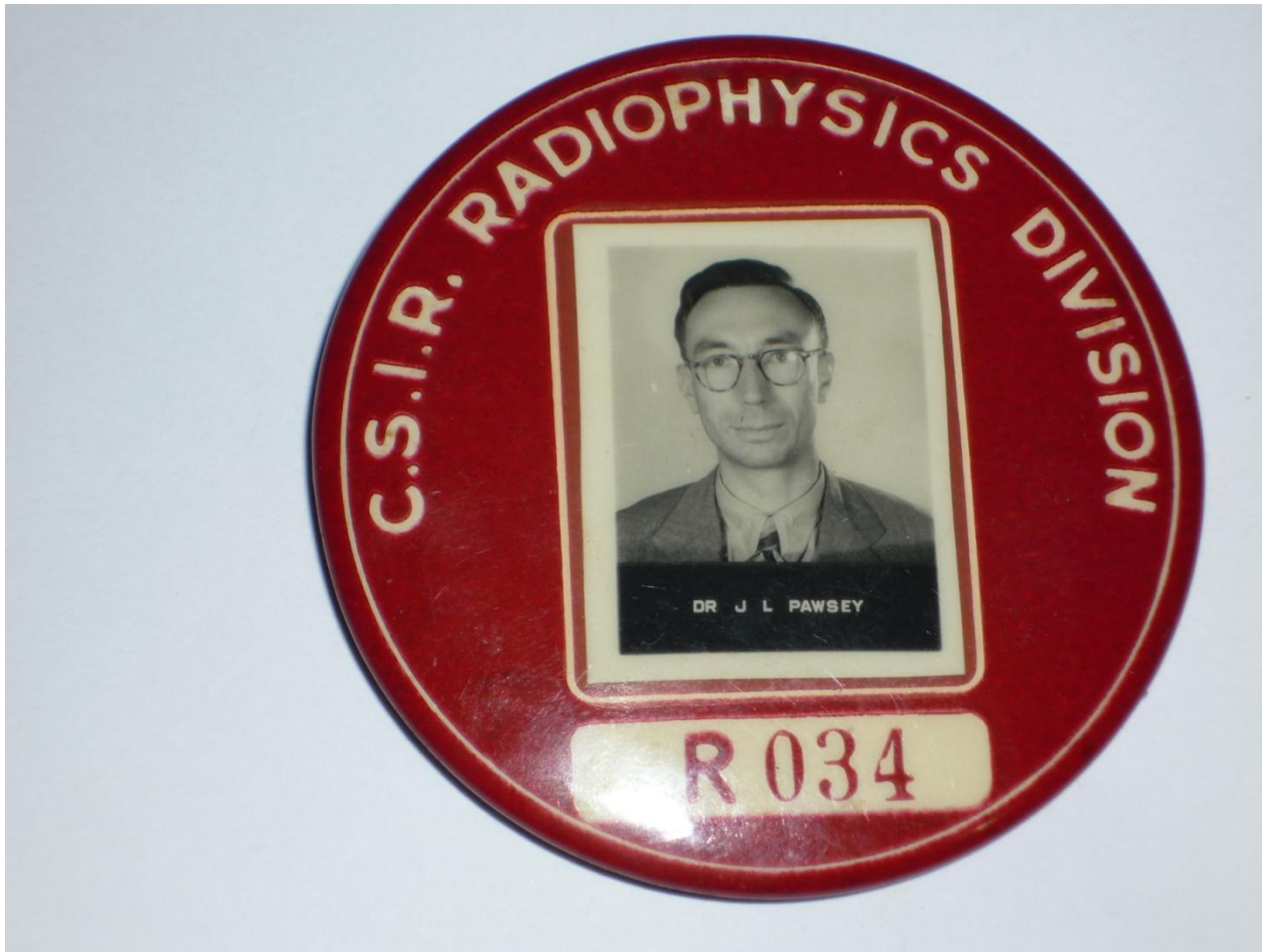
by

Joseph Lade Pawsey

Sidney Sussex College.

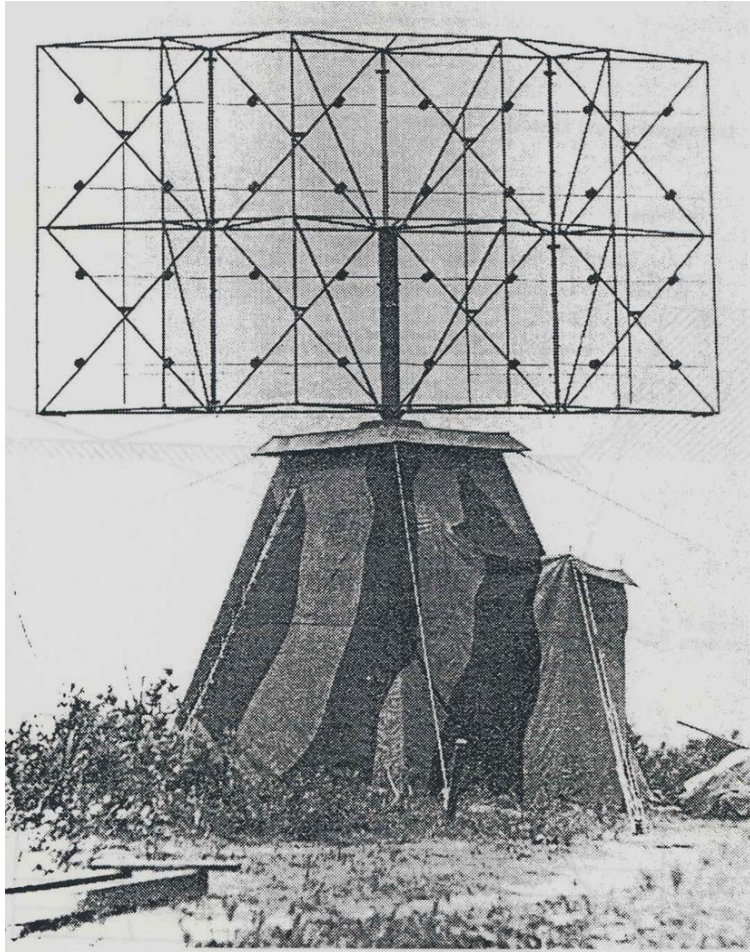
November, 1934.

Starts at RPL Feb 1940- seen by MG  
on 5 February 2011

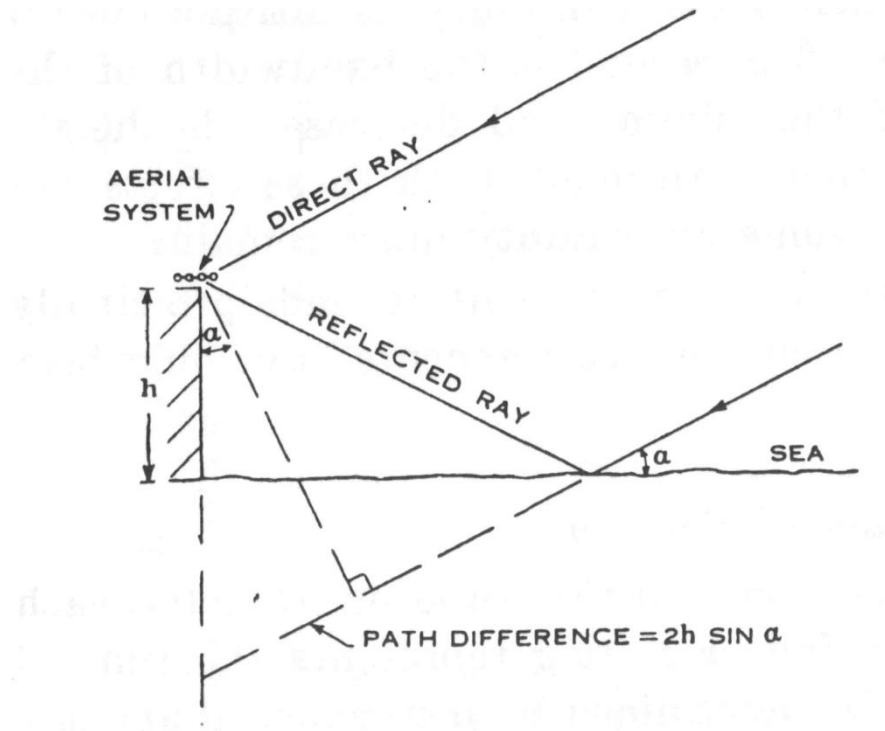




# L.W./A.W. Mk I- New Guinea and Port Stephens 1975



# The Sea-cliff interferometer



The Sea Cliff Interferometer- first use of radio astronomical interferometry 26 Jan.  
1946- Australia Day- by Ruby Payne-Scott , Pawsey and McCready



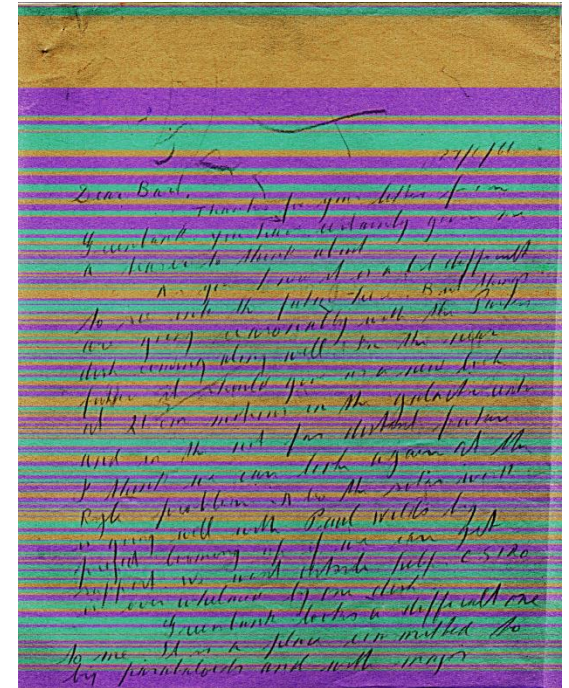
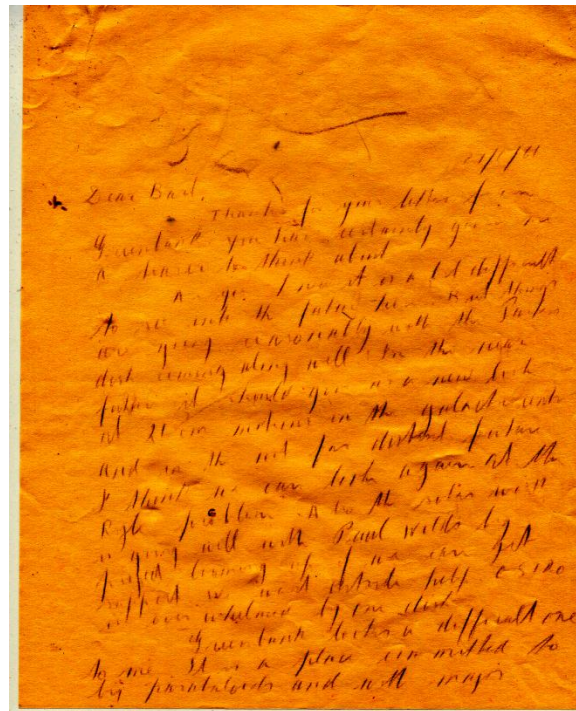
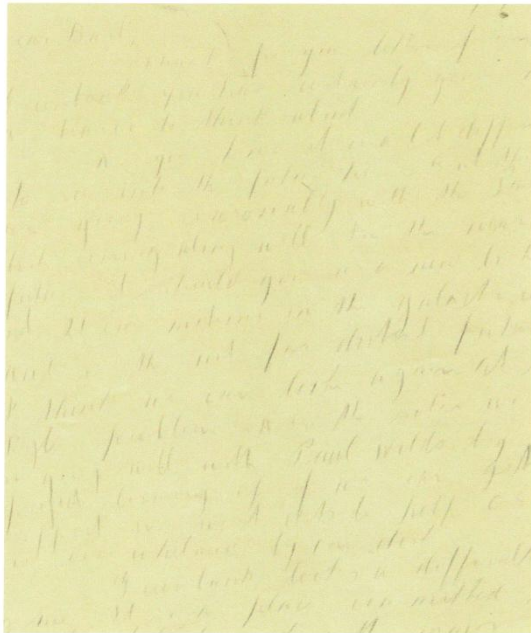


# Time-line

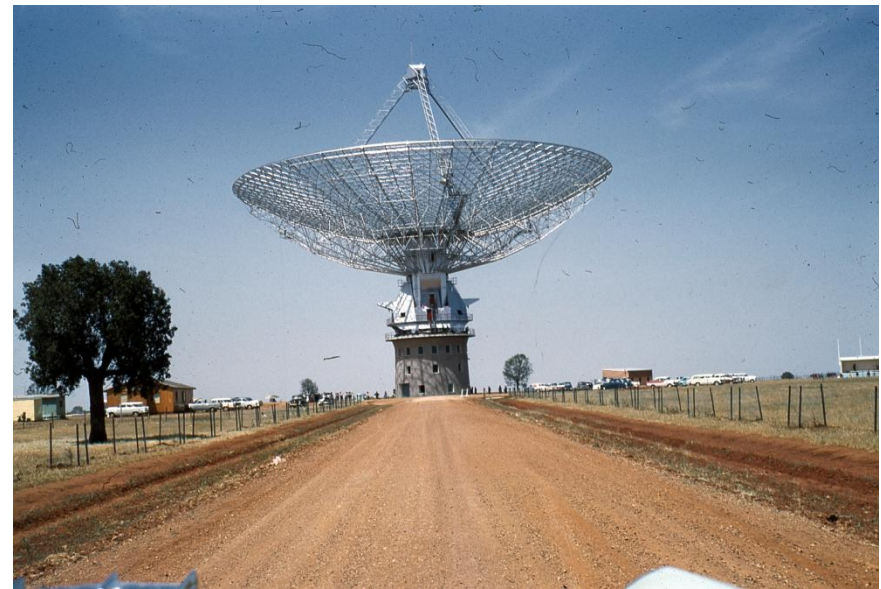
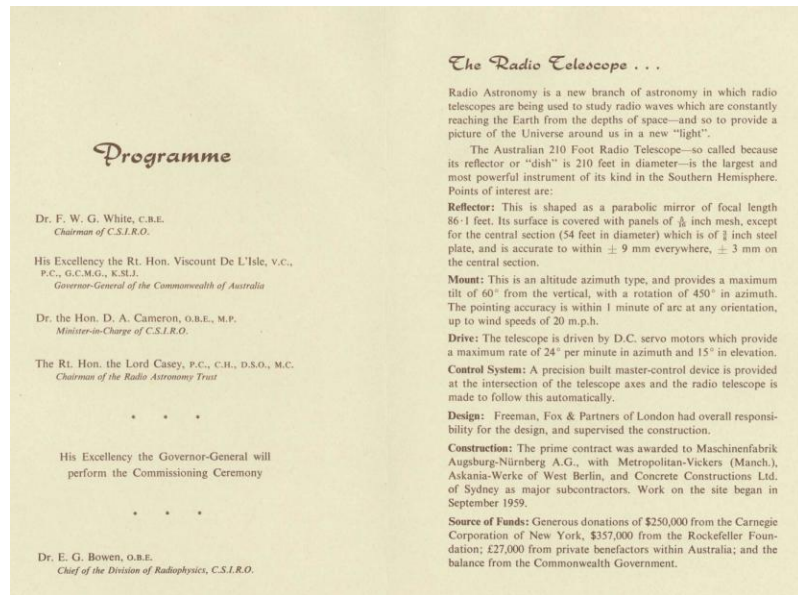
- 16 June 1961. Bok writes JLP with an informal sounding out if JLP would be interested in taking over from the unhappy Otto Struve as Director of NRAO in the US ... ' whether they can (politically) offer the Directorship to a non-American- but I thought it would be well to know if, in principle, you would be interested.... Otto Struve is frankly not the man for that job...'
- JLP writes back with the unreadable (really a terrible carbon copy written with pencil) letter on 21 June 1961. '.. I would be quite interested in trying to start something worth while in the states, I don' think I am the Green Bank man...'
- August 1961- General Assembly of the International Union in Berkeley
- Parkes Telescope (GRT) was opened on 31 October 1961

# Handwritten letter – carbon

## Answer to Bok



# And on the right JLP's photo at the day of the Parkes opening 31 October 1961



# Time-line continued

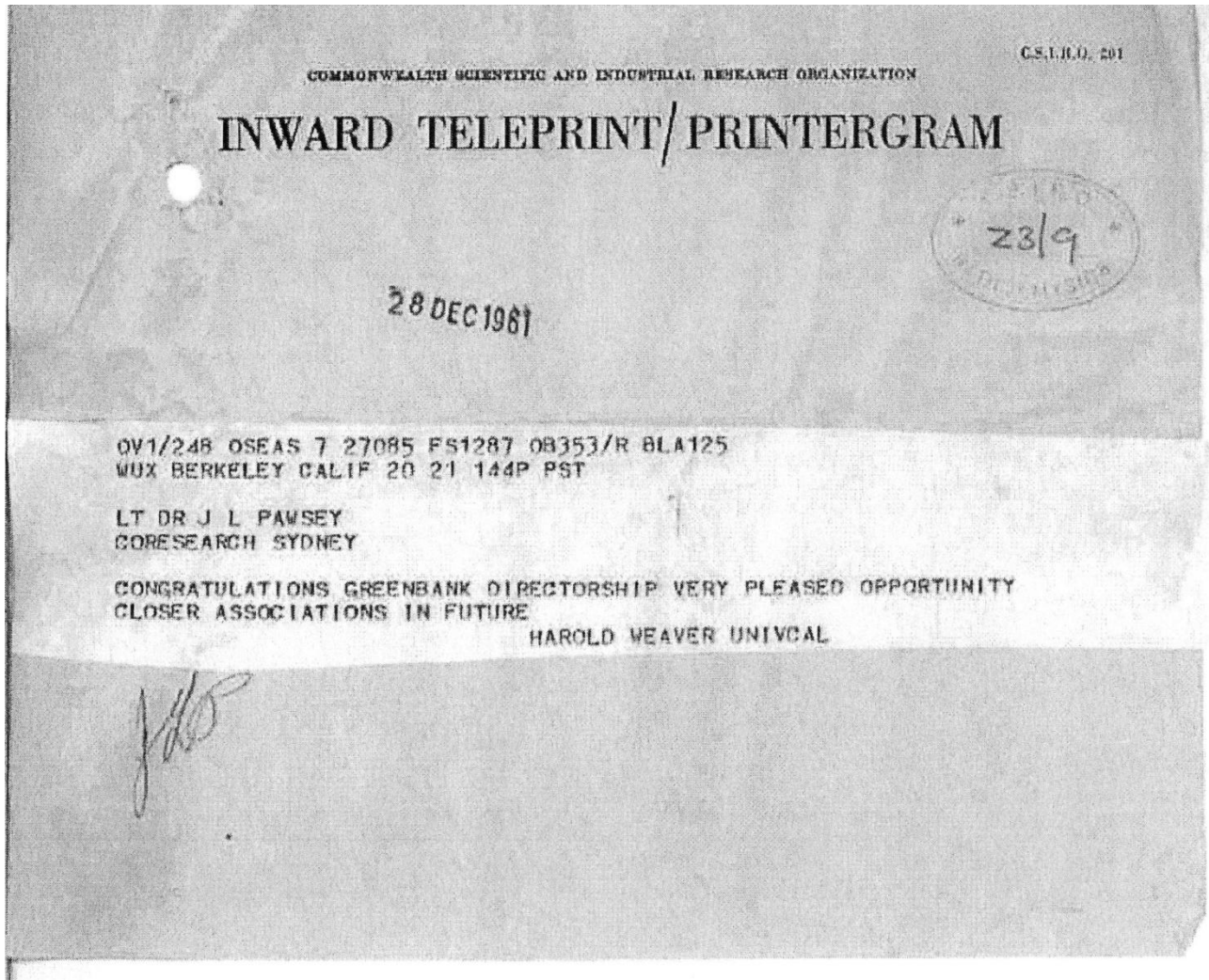
- Same day – 31 October 1961- Rabi writes JLP with an offer to be the Director of NRAO . I had looked for this letter for years; also Rabi and JLP had met in London to discuss this
- JLP responds on 26 November 1961 with the idea to take it for 3 years

## Offer letter from I.I. Rabi President of AUI





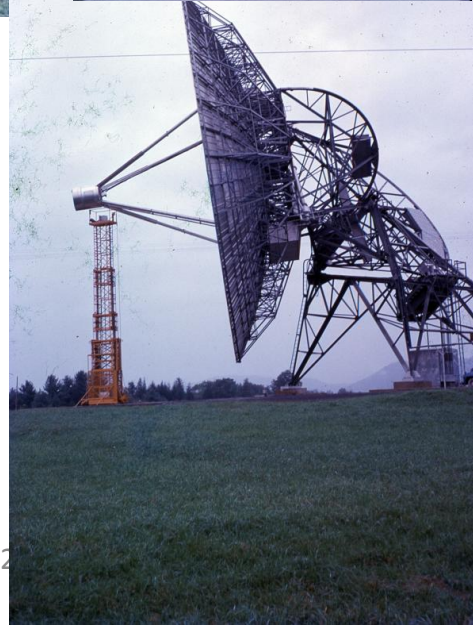
# Harold Weaver sends a congratulatory telegram Dec 1961



## Time-line continued- starts with Orientation Visit to GB – sorting out plans for NRAO and housing etc

- JLP to Green Bank West Virginia NRAO on 20 March 1962 arriving from Sydney
- Around 23 or 24 March signs of tumour apparent with paralysis of left arm, hand and left leg
- JLP seen by local GB doctor. Dave Heeschen takes him to DC Hospital Center , organized by Jerry Tape of AUI and also Merle Tuve of DTM (Carnegie Institution of Washington). In DC hospital from 27 March to about 1 May. Ted Nicoll, brother of Lenore Pawsey, came from Princeton on 30 or 31 March and stayed the weekend. Next weekend on 7 April they rang Lenore in Sydney. Slow recovery. Cam Wade spent several weeks in DC helping to look after JLP by running errands etc. Cam is a great source of information about this period

# Visit to GB 1962



# Time-line continued

- In a letter to the family on 13 April he says he has partial use of his hand and leg. Some improvement and expect a complete recovery in near future. Later planned to go to Ted's for short time and then return by air to Sydney. AUI was to pay all the bills

# Time-line continued

- About 1 May he goes to Princeton. Lenore Pawsey arrives around 10 May. Ruth Nicoll, niece of Joe, remembers that Rabi came to the house and organized the next step. Next to Mass General Hospital where Prof Bill Sweet, AUI Trustee and Prof of Medicine at Harvard, was to operate. JLP continued to deteriorate in N.J. and went to MGH around 8-10 May



# Time-Line continued

- Tests done at MGH with radio isotopes and tumour found (GBM ?)
- Operation for the brain tumour evening of 15 May
- Leo Goldberg-astronomer at Harvard-reported that ‘ .. would not be optimistic.’ Sweet told Wade that that tumour was one of the largest he had seen - the size of a banana

# Time-line continued

- Tuesday 12 July they leave MGH for Nicoll's house in Princeton
- Paul Wild delayed his trip to go back to Australia in order to accompany Joe and Lenore back to Sydney on QANTAS
- The three depart NYC on 27 July, a Friday. They have VIP treatment on the aircraft. Arrive in good condition on Sunday 29 July in Sydney with a painful meeting with the two sons, Hastings and Stuart

# Time-line continued

- Daily physio, often to lab for short visits. Edits a radio astronomy volume for the Proc IRE on radio astronomy. Rabi wrote Wild 20 August 62 : ' If character were all, Joe would now be a well man.'
- Turn for the worse in mid October
- 26 October to Victoria Private Hospital Potts Point. No more care except for some painkilling medicines
- 3 Nov. 1962 Fred Hoyle came to this hospital to present the 'Hughes Medal' of the Royal Society to JLP. About this time David Heesch and Jerry Tape actually visited JLP in this period

DIVISION OF RADIOPHYSICS

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UNIVERSITY GROUNDS,  
SYDNEY, N.S.W.

25th October 1962

REFER TO

Dr. J.L. Pawsey,  
21 Derby Street,  
VAUCLUSE.

Dear Dr. Pawsey,

Most of us in your radio astronomy group have not seen as much of you in recent months as we would have liked. When we do meet there is usually so much work to discuss that other things that ought to be said get left unsaid. We know no words to express our sorrow that you should have been stricken so suddenly in the prime of your creative life, and this letter is to let you know the extent to which we appreciate the privilege of working in your team.

We appreciate not only your own contributions in radio astronomy, but your rare ability to dovetail the work of many individuals into a coherent and well-directed effort. We realize that by keeping your door open to us at all times, by listening patiently to new ideas in even their earliest and vaguest forms, by discussing the most minute details of papers, and by giving so freely of your physical knowledge, experience and intuition, you have been sacrificing most of your own research time to the success of the group as a whole. We would like to thank you for this.

We believe that although you can no longer play the same active role in leading the group, the Sydney radio astronomy effort (whether in R.P. or elsewhere) will continue to blossom, not merely because of the momentum you have given it over the last fifteen years, but because you have been responsible for giving a set of ordinary individuals the interest and drive to continue your work, and the confidence to do well in the open field of international competition. Australian radio astronomy,

like most unusual phenomena, can be traced in the main to a single cause, and we are well aware what that single cause is.

With the deepest respect and affection of your colleagues,

<i>Paul Wild</i>	<i>Sunday McCreedy</i>
<i>Kevin Sheridan</i>	<i>Bruce Cooper</i>
<i>Max Komescott</i>	<i>Alan Weir</i>
<i>Steve Finest</i>	<i>Brian Robinson</i>
<i>Chris Christine</i>	<i>Peter Schuur</i>
<i>John BSM</i>	<i>Bernard Mills</i>
<i>Bruce Lee</i>	<i>Alan Cook</i>
<i>S. Suzuki</i>	<i>Jan Roberts</i>
<i>Norman Labrum</i>	<i>Frank Kerr</i>
<i>Eric Hill</i>	<i>Dick [unclear]</i>
<i>Jim Bendiman</i>	<i>Dick Mullaly</i>
<i>Alan Best</i>	<i>Don Mathewson</i>
<i>Frank Gardner</i>	<i>Joe [unclear]</i>
	<i>Jack Piddington</i>
	<i>Charles Higgin</i>
	<i>Harry Minnett</i>
	<i>Fred Lehman</i>

# Time-line continued

- Died at age 54 on 30 November 1962
- Bark Bok wrote Lenore on 4 Dec with summary of the eulogy he had given for JLP a few days earlier. ‘ There are very few scientists in the world who will be able to look back upon a life in which they have helped produce so many distinguished scientists... Second I mentioned that Joe was rated as the most profound critic among Australian radio astronomers.’



# What would Pawsey's impact have been on NRAO had he survived?

- We can make some estimates based on two remarkable letters that JLP wrote in the hospital in Boston 27 June 1962 to Bill Erickson in Leiden working on the Benelux Cross and on 4 July 1962 to Peter Scheuer still in Sydney at RPL. JLP was trying to hire these two to work on the next NRAO project.
- Also we have 'Notes on Future Program at Green Bank' from 17 July 1962.

# Notes on Future Program at Green Bank

- ‘Third approach (after a large aperture and short wavelengths) was ... The application of interference principles, involves the combination of signals from a limited number of moderately large antennae and in my opinion is much the most promising for the provision of greatly improved angular resolution.... The specific objectives of the Green Bank high resolution project should be the provision of equipment furthering the study of radio galaxies. The discovery of radio galaxies in the sky has provided some of the most interesting problems of present day astronomy.’

# Bracewell Piers - Stanford





# Oort and JLP sailing in the NL- 1950s?- the family in 1949



# 1958- NRAO Green Bank





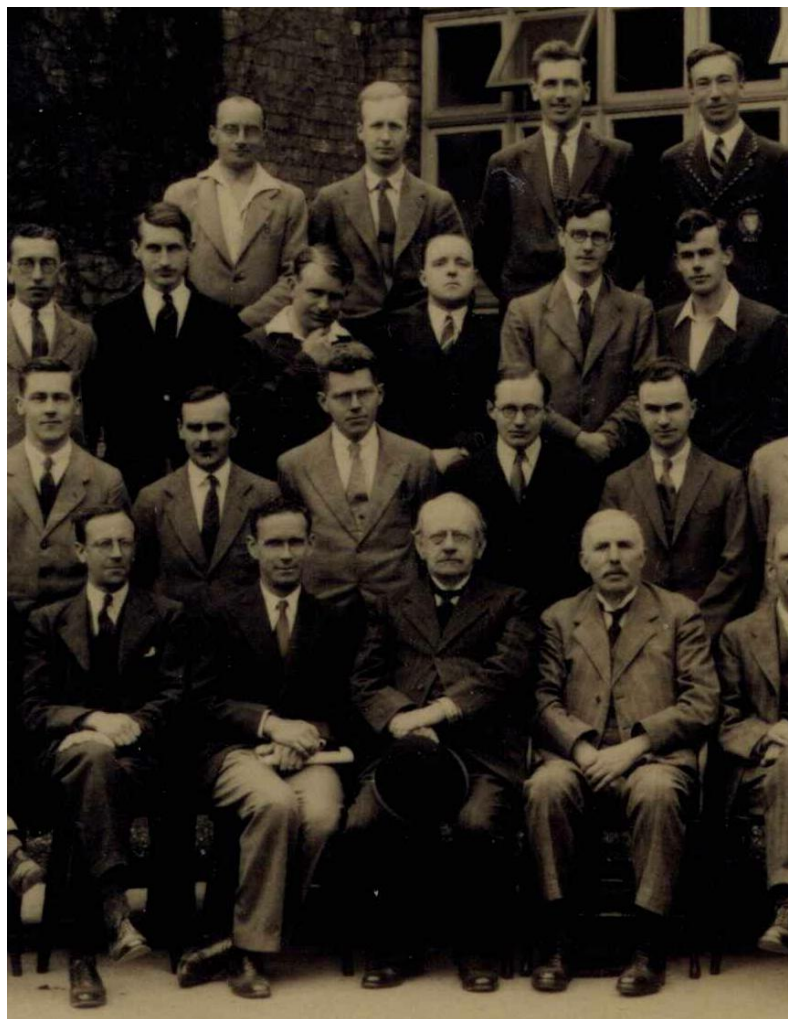
# IAU 1961- visit to Yosemite



# The Cavendish Lab 1932- find all the Australians ! Also 9 current and future Nobel Prizes







W. M. Goss. 19 May 2011