

(October, 1946)

Name in full: Arthur John HIGGS

Academic record:

(Details of degrees and diplomas and year gained, final honours gained during course, major subject of course, scholarships held, and the name of University or Technical School)

B.Sc. (Sydney) with Class 1 Honours in Physics - 1926.
Barker Scholarship and Horner Exhibition for Mathematics.
Deas Thomson Scholarship in Physics.

Post-graduate experience before joining C.S.I.R. :
(Including details of any specialized training overseas)

1926 Demonstrator in Physics, Sydney University.

1926 - 1941 Commonwealth Observatory.

Membership of professional institutes:

F. Inst. P.

List of scientific papers, with references :
(Including internal publications of C.S.I.R. and papers published prior to appointment to C.S.I.R.)

1. Phil. Mag. Vol. VII Feb. 1929 (with V.A. Bailey) -
"On the Attachment of Electrons to Molecules of HCl and NH₃".
2. Memoir No. 3 of the C'wealth Solar Observatory, 1934.
"Measurements of Atmospheric Ozone".
3. C.S.I.R. Bulletin No. 89 1935 (with Munro & Webster) -
"Simultaneous Observations of Atmospheric with Cathode Ray Direction Finders at Toowoomba and Canberra".
4. C.S.I.R. Bulletin No. 100 1936 (with Munro and Wark) -
"Observations of Atmospheric with a Narrow Sector Directional Recorder at Canberra".
"Characteristics and Distribution of Sources of Atmospheric".
5. Nature Vol. 140 Oct. 9 1937 (with Martyn, Munro & Williams) -
"Ionospheric Disturbances, Fadeouts and Bright Hydrogen Eruptions".
6. C.S.I.R. Bulletin No. 127 1939 (with Webster and Munro) -
"Further Studies of Directions of Atmospheric at Toowoomba and Canberra".
7. Terr. Mag. and Atm. Electricity June 1939 (with Giovanelli) -
"The Association of Radio Fadeouts with Solar Eruptions".
8. Royal Society A Vol. 174 Feb. 1940 (with Bannan, Martyn and Munro) -
"The Association of Meteorological Changes with Variations of the Ionisation in the F₂ Region of the Ionosphere".

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9. Terr. Mag. and Atn. Electricity March 1941 (with Bannon & Munro) -
"Magnetic Disturbances and Region F₂ of the Ionosphere".
10. M.N. R.A.S. No. 1 1942 -
"Ionospheric Measurements during the Total Solar Eclipse of 1940
October 1".
11. Radiophysics Report PD 18 1942 (with Parker) -
"S.L.C. - Descriptive Manual and Operating Instructions".
12. Radiophysics Report PD. 25 1943
"Handbook for Ionospheric Recorder"
13. Radiophysics Report RPR.35 1946 -
"Instruction Manual for Ionospheric Recorder type 1/J28".

MR. A.J. HIGGS

6 Jan. 1904 Born Cheltenham, N.S.W.

1926 Graduated B.Sc. (1st Class Hons.) Sydney Uni.
Joined staff of Commonwealth Solar Observatory,
Department of Interior, Canberra.

1930-37 In charge of Radio Research Board's cathode ray
direction finding station on Mt. Stromlo.

1937-41 Engaged in ionospheric research

1940 Elected Fellow of the Institute of Physics
In charge of expedition to South Africa to observe
total solar eclipse of 1 October, 1940.

Sept. 1941 Seconded to Division of Radiophysics as Research
Officer.

July 1945 Appointed Technical Secretary of Radiophysics.

March 1952 to
May 1953 In charge of Scientific Liaison Office, Washington.

1955 Appointed Secretary of N.S.W. State Committee.

Oct. 1963 Member of Australian delegation to Extraordinary
Administrative Radio Conference, Geneva.

Feb-Mar 1965 Member of Australian delegation to CCIR Interim
meeting, Monte Carlo.

June 1967 Australian representative at meeting of IUCAF,
Washington.

3 Jan. 1969 Retired from CSIRO, still as a permanent officer
of the Commonwealth Public Service, on secondment
from Department of Interior.

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17th October, 1966.

Mr. W.F. Evans,
Secretary,
Radio Research Board,
C.S.I.R.O.,
314 Albert Street,
EAST MELBOURNE, Victoria.

Dear Wally,

I am sorry to have side-stepped what was apparently an important point in your letter of the 30th September last. It is, however, not an easy question to answer.

The work described in all the papers in which I appear as co-author with various Radio Research Board people was done while I was a member of the staff of the Commonwealth Observatory at Mount Stromlo. In papers 1, 2, 3, 4 and 6 the other authors were at the University of Melbourne; for the remainder they were at the University of Sydney.

My association with the Radio Research Board began when L.G.H. Huxley was appointed by the Board and came to Australia, bringing with him a Cathode Ray Direction Finder and an Atmospheric Recorder (DSIR patterns) for the study of atmospherics. Arrangements were made, presumably between J.P.V. Madsen and the Director of the Observatory, for these to be set up and operated at Mount Stromlo; they were originally installed by Huxley, with help from me. They were operated by Huxley for something like the best part of a year and, after that, I carried on alone. In due course papers 1, 2, 3, 4, and 6 were produced.

It was mainly, I suppose, as a result of contacts developed with Radio Research Board people during this period that it was arranged that the first P'-f equipment developed by the Radio Research Board (by Owen Pulley) should be installed at Stromlo; I was responsible for operating this - and several improved versions which were designed and built in the Observatory workshop at Mount Stromlo - for a number of years, in fact, until

the outbreak of war and my secondment to C.S.I.R.O. This association led to papers 5, 7, and 8 on your list. In my continuing liaison with the Radio Research Board from the early 1930's I was always a member of the Stromlo staff, but most of the equipment and supplies (e.g. radio equipment and film for the P'-f recorders) came from the Radio Research Board, and all the records taken at Stromlo were handed over to the Board.

I am sorry to say I do not have any spare reprints of any of the papers dealing with the Radio Research Board work.

Yours sincerely,

(A.J. Higgs)
ASSISTANT TO THE CHIEF

AJH.ER



PHYSICS IN AUSTRALIA TO 1945

Inquiries and corrections to R.W. Home (home@unimelb.edu.au)
WWW edition prepared by Tim Sherrat and Victoria Young for *Bright Sparcs*, June 1995

HIGGS, Arthur John

Born Sydney 6 January 1904. Education University of Sydney (B.Sc. 1926). Assistant, Mt. Stromlo Observatory, 1926-40. Research officer, C.S.I.R./O. Division Radiophysics 1940-69; Technical secretary, 1945-69.

1. (With V.A. Bailey) On the attachment of electrons to the molecules HCL and NH**3. *Philosophical Magazine*, S.7, 7 (1929), 277-286.
2. Measurements of atmospheric ozone made at the Commonwealth Solar Observatory, Mount Stromlo, Canberra, during the years 1929 to 1932. *Australia. Commonwealth Solar Observatory, Mt. Stromlo. Memoirs.*, No.3 (March 1934), 29pp.
3. (With G.H. Munro and H.C. Webster) Simultaneous observations of atmospherics with cathode ray direction-finders at Toowoomba and Canberra. *Australia. Council for Scientific and Industrial Research. Bulletin.*, 89 (1935), *Australia. Radio Research Board. Report* 8, 9-42.
4. (With G.H. Munro and W.J. Wark) Observations of atmospherics with a narrow sector directional recorder at Canberra. *Australia. Council for Scientific and Industrial Research. Bulletin.*, 100 (1936), *Australia. Radio Research Board. Report* 10, 19-30.
5. (With G.H. Munro and W.J. Wark) Characteristics and distribution of sources of atmospherics. *Australia. Council for Scientific and Industrial Research. Bulletin.*, 100 (1936), *Australia. Radio Research Board. Report* 10, 31-41.
6. (With H.C. Webster and G.H. Munro) Thunderstorms in the Tasman Sea and Coral Sea, March, 1934. *Meteorological Magazine*, 71 (1936), 59-62.
7. (With D.F. Martyn, G.H. Munro and S.E. Williams) Ionospheric disturbances, fadeouts and bright hydrogen solar eruptions. *Nature*, 140 (1937), 603-605.
8. (With R.G. Giovanelli) Recent solar eruptions, auroras, and magnetic storms. *Nature*, 141 (1938), 746.
9. (With R.G. Giovanelli) The association of radio fade-outs with solar eruptions. *Terrestrial Magnetism and Atmospheric Electricity*, 44 (1939), 181-187.
10. (With H.C. Webster and G.H. Munro) Further studies of directions of atmospherics at Toowoomba and Canberra. *Australia. Council for Scientific and Industrial Research. Bulletin.*, 127 (1939), *Australia. Radio Research Board. Report* 14, 7-21.
11. (With J. Bannon, D.F. Martyn and G.H. Munro) The association of meteorological changes with variations of ionization in the F**2 region of the ionosphere. *Proceedings of the Royal Society of London, A*, 174, (1940), 298-309.
12. (With J.A. Pierce and E.C. Halliday) Decrease in ionization of the F**2 region during solar eclipse. *Physical Review*, 58, (1940), 1119. Also published as: Ionospheric observations during the solar eclipse of October 1. *Nature*, 146 (1940), 747.
13. Ionospheric observations by the Australian eclipse expedition of 1940. *Australian Journal of Science*, 4 (1941), 11-13.

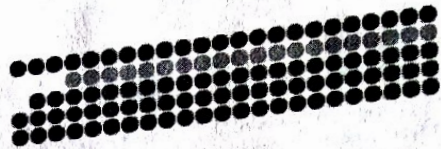
14. (With J. Bannon and G.H. Munro) Magnetic disturbances and region F^{**2} of the ionosphere. *Terrestrial Magnetism and Atmospheric Electricity*, 46 (1941), 61-69.
15. Ionospheric measurements made during the total solar eclipse of 1940 October 1. *Royal Astronomical Society. Monthly Notices.*, 102 (1942), 24-34.

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ENCYCLOPEDIA OF AUSTRALIAN SCIENCE



BIOGRAPHICAL ENTRY

Higgs, Arthur John (1904 -)

Born 6 January 1904
Sydney, New South Wales, Australia

Occupation Astronomer and Radiophysicist

Summary

Arthur John Higgs worked at Mount Stromlo Observatory from 1926-40 before moving to the Division of Radiophysics at CSIRO, where he worked as a research officer and technical secretary.

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Published Resources

Details

Born 6 January 1904. Educated University of Sydney (BSc 1926). Assistant, Mount Stromlo Observatory 1926-40, Research officer, CSIRO Division of Radiophysics 1940-69, technical secretary 1945-69.

Published resources

Encyclopedia of Australian Science Exhibitions

The Giant's Eye: the Optical Munitions Exhibition, Australian Science Archives Project, 1997, <http://www.asap.unimelb.edu.au/bsparcs/exhib/omp/omp.htm>. Details

Online Resources

'Higgs, Arthur John', in *Physics in Australia to 1945*, R.W. Home, with the assistance of Paula J. Needham, Australian Science Archives Project, June 1995, <http://www.asap.unimelb.edu.au/bsparcs/physics/P001686p.htm>. Details

'Higgs, Arthur John', in *The Giant's Eye: the Optical Munitions Exhibition, A Bright Sparcs Exhibition*, Australian Science Archives Project, 1997, <http://www.asap.unimelb.edu.au/bsparcs/exhib/omp/people/higgs.htm>. Details

'Higgs, Arthur John (19040106-)', *Trove*, National Library of Australia, 2009, <http://nla.gov.au/nla.party-1476937>. Details

See also

Sherratt, Tim; Condé, Anne-Marie, *A Wartime Observatory Observed - the Mount Stromlo Community, 1940-1945*, Australian Science Archives Project, Canberra, 1994, http://www.asap.unimelb.edu.au/pubs/articles/tps/tps_stromlo_draft.htm. Details

McCarthy, G.J.

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