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BACKGROUND ON DR. PHILIP K. CHAPMAN

Dr. Philip K. Chapman, 32, who has just been selected as a scientist-astronaut by the National Aeronautics and Space Administration, has been a physicist at the Experimental Astronomy Laboratory, Massachusetts Institute of Technology, since 1961.

His present principal scientific interests are in the development of the relativistic theory of gravitation and in the study of gravitational interactions between the planets and other celestial bodies, together with the design of sensitive instrumentation for space experiments in these areas.

For his Master of Science degree, which he received in Aeronautics and Astronautics from M.I.T. in 1964, he developed as his thesis a very sensitive accelerometer which uses as the proof-mass a small permanent magnet freely suspended by magnetic forces inside an evacuated superconducting tube. The lack of friction in this suspension allows the detection of extremely small accelerations or gravitational fields along the axis of the tube. The device is now being used for studies at NASA's Electronics Research Center, Cambridge, Mass.

In June, 1967, he received the degree of Doctor of Science in Instrumentation with a thesis concerning the theoretical foundations of gravitational experiments in the space environment. The emphasis in this work was on the development of approaches to gravitational phenomena which are conceptually and mathematically simpler than those used in the General Theory of Relativity. The work is expected to aid in the design of experimental instrumentation.

Dr. Chapman will begin his role as a scientist-astronaut in mid-September when he reports to NASA's Manned Spacecraft Center at Houston, Tex., for six months of intensive astronaut training. That will be followed by a year of flight training where he will become a supersonic jet pilot. It is anticipated that he will be involved primarily with the Apollo Applications Program, the program designed to make scientific use of the capabilities resulting from the Apollo Program.

Dr. Chapman was born March 5, 1935, in Melbourne, Victoria, Australia. He is the son of Mr. and Mrs. Colin R. Chapman of Sydney. His father and his brother, John R. Chapman, are engaged in public relations on behalf of the Australian wool industry.

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Dr. Chapman's father is a former sub-editor of the Sydney Daily Telegraph, was director of overseas trade publicity for the Australian Department of Commerce and Agriculture and presently serves as the Australian representative for Fairchild Publications, Inc., of New York City.

Dr. Chapman is a descendant of one of the oldest pioneering families in Australia, his first ancestor having arrived there in 1790, two years after the first European settlement. Also included amongst his ancestors is Hamilton Hume, one of the best known of early Australian explorers. His uncle, Norman Chapman, was active in the development of the aviation industry in Australia, participating in the establishment of many of the early outback airline routes of QANTAS before his death in an airplane accident in North Queensland in 1937.

Dr. Chapman is married to the former Pamela Gatenby, of Herberton, North Queensland, and has one son, Peter Hume, aged six. His father-in-law, Mr. Charles Gatenby, who now has mining interests in Herberton, was an engineer for Sir Charles Kingsford-Smith (who was the first man to fly the Pacific, in 1927) before becoming a pilot himself and taking part in the development of airline routes from England to Australia in the 1930s.

Dr. Chapman's secondary education was at Parramatta High School, Parramatta, New South Wales, from which he graduated as valedictorian in 1952. He was awarded a Commonwealth Scholarship and University Bursary to study science at Sydney University, and was admitted to the Bachelor of Science degree in May, 1956, with physics as his major and mathematics as his minor field. He was a member of the Sydney University Squadron, R.A.A.F., being commissioned in the R.A.A.F. General Reserve upon graduation. He completed his Australian National Service obligation with the R.A.A.F. during university vacations. During his active duty periods, he was given flying instruction and received a private pilot's license.

After graduation, he joined Philip's Electrical Industries Ltd. in the Sydney Electronic Applications Laboratory, with responsibilities for TV, radio and audio circuit design. In December, 1957, he went to Mawson, MacRobertson Coast, Antarctica, with the 1958 Australian National Antarctic Research Expedition (I.G.Y.), as an auroral/radio physicist. The tour of duty was 15 months, and he wintered at a two-man remote station, carrying out synoptic photographic studies of aurorae. In 1963, he was invested with the British Polar Medal for services in Antarctica.

After his return to Australia in 1959, Dr. Chapman decided to come to the U.S. to work and study under Dr. Charles Stark Draper, M.I.T. Institute Professor and former

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Head of the Department of Aeronautics and Astronautics. Pending visa clearances, he moved to Montreal, Quebec, Canada, where he worked on radar simulation apparatus for the R.C.A.F. Argus aircraft Tactical Crew Procedure Trainer for Canadian Aviation Electronics, Ltd.

When he came to M.I.T. in April, 1961, he joined the Experimental Astronomy Laboratory which was just then being formed by Dr. Draper and his associate, Dr. Winston Markey, around a nucleus of scientists and engineers from Dr. Draper's famed Instrumentation Laboratory. Dr. Markey, a former Chief Scientist for the U.S. Air Force, is the director of EAL, which is concerned with developing advanced electro-optical and inertial stabilization and control systems to conduct astronomical observations and other scientific experiments from above the earth's atmosphere.

Dr. Chapman declared his intention to become a U.S. citizen in 1962 and was naturalized as a citizen in May, 1967. He has, however, continued to take a deep interest in the problems involved in developing a healthy aerospace industry in his native Australia.

Dr. Chapman and his family live at 24-1 Garden Circle, Waltham, Mass.

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August 1967