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THE NASA HISTORY SERIES

Reference Works, NASA SP-4000

- Grimwood, James M. *Project Mercury: A Chronology* (NASA SP-4001, 1963).
- Grimwood, James M., and Hacker, Barton C., with Vorzimmer, Peter J. *Project Gemini Technology and Operations: A Chronology* (NASA SP-4002, 1969).
- Link, Mae Mills. *Space Medicine in Project Mercury* (NASA SP-4003, 1965).
- Astronautics and Aeronautics, 1963: Chronology of Science, Technology, and Policy* (NASA SP-4004, 1964).
- Astronautics and Aeronautics, 1964: Chronology of Science, Technology, and Policy* (NASA SP-4005, 1965).
- Astronautics and Aeronautics, 1965: Chronology of Science, Technology, and Policy* (NASA SP-4006, 1966).
- Astronautics and Aeronautics, 1966: Chronology of Science, Technology, and Policy* (NASA SP-4007, 1967).
- Astronautics and Aeronautics, 1967: Chronology of Science, Technology, and Policy* (NASA SP-4008, 1968).
- Ertel, Ivan D., and Morse, Mary Louise. *The Apollo Spacecraft: A Chronology, Volume I, Through November 7, 1962* (NASA SP-4009, 1969).
- Morse, Mary Louise, and Bays, Jean Kernahan. *The Apollo Spacecraft: A Chronology, Volume II, November 8, 1962–September 30, 1964* (NASA SP-4009, 1973).
- Brooks, Courtney G., and Ertel, Ivan D. *The Apollo Spacecraft: A Chronology, Volume III, October 1, 1964–January 20, 1966* (NASA SP-4009, 1973).
- Ertel, Ivan D., and Newkirk, Roland W., with Brooks, Courtney G. *The Apollo Spacecraft: A Chronology, Volume IV, January 21, 1966–July 13, 1974* (NASA SP-4009, 1978).
- Astronautics and Aeronautics, 1968: Chronology of Science, Technology, and Policy* (NASA SP-4010, 1969).
- Newkirk, Roland W., and Ertel, Ivan D., with Brooks, Courtney G. *Skylab: A Chronology* (NASA SP-4011, 1977).
- Van Nimmen, Jane, and Bruno, Leonard C., with Rosholt, Robert L. *NASA Historical Data Book, Volume I: NASA Resources, 1958–1968* (NASA SP-4012, 1976, rep. ed. 1988).
- Ezell, Linda Neuman. *NASA Historical Data Book, Volume II: Programs and Projects, 1958–1968* (NASA SP-4012, 1988).
- Ezell, Linda Neuman. *NASA Historical Data Book, Volume III: Programs and Projects, 1969–1978* (NASA SP-4012, 1988).
- Gawdiak, Ihor Y., with Fedor, Helen. Compilers. *NASA Historical Data Book, Volume IV: NASA Resources, 1969–1978* (NASA SP-4012, 1994).
- Rumerman, Judy A. Compiler. *NASA Historical Data Book, Volume V: NASA Launch Systems, Space Transportation, Human Spaceflight, and Space Science, 1979–1988* (NASA SP-4012, 1999).

- Astronautics and Aeronautics, 1969: Chronology of Science, Technology, and Policy* (NASA SP-4014, 1970).
- Astronautics and Aeronautics, 1970: Chronology of Science, Technology, and Policy* (NASA SP-4015, 1972).
- Astronautics and Aeronautics, 1971: Chronology of Science, Technology, and Policy* (NASA SP-4016, 1972).
- Astronautics and Aeronautics, 1972: Chronology of Science, Technology, and Policy* (NASA SP-4017, 1974).
- Astronautics and Aeronautics, 1973: Chronology of Science, Technology, and Policy* (NASA SP-4018, 1975).
- Astronautics and Aeronautics, 1974: Chronology of Science, Technology, and Policy* (NASA SP-4019, 1977).
- Astronautics and Aeronautics, 1975: Chronology of Science, Technology, and Policy* (NASA SP-4020, 1979).
- Astronautics and Aeronautics, 1976: Chronology of Science, Technology, and Policy* (NASA SP-4021, 1984).
- Astronautics and Aeronautics, 1977: Chronology of Science, Technology, and Policy* (NASA SP-4022, 1986).
- Astronautics and Aeronautics, 1978: Chronology of Science, Technology, and Policy* (NASA SP-4023, 1986).
- Astronautics and Aeronautics, 1979–1984: Chronology of Science, Technology, and Policy* (NASA SP-4024, 1988).
- Astronautics and Aeronautics, 1985: Chronology of Science, Technology, and Policy* (NASA SP-4025, 1990).
- Noordung, Hermann. *The Problem of Space Travel: The Rocket Motor*. Stuhlinger, Ernst, and Hunley, J.D., with Garland, Jennifer. Editors (NASA SP-4026, 1995).
- Astronautics and Aeronautics, 1986–1990: A Chronology* (NASA SP-4027, 1997).
- Gawdiak, Ihor Y., and Shetland, Charles. Compilers. *Astronautics and Aeronautics, 1991–1995: A Chronology* (NASA SP-2000-4028, 2000).

Management Histories, NASA SP-4100

- Rosholt, Robert L. *An Administrative History of NASA, 1958–1963* (NASA SP-4101, 1966).
- Levine, Arnold S. *Managing NASA in the Apollo Era* (NASA SP-4102, 1982).
- Roland, Alex. *Model Research: The National Advisory Committee for Aeronautics, 1915–1958* (NASA SP-4103, 1985).
- Fries, Sylvia D. *NASA Engineers and the Age of Apollo* (NASA SP-4104, 1992).
- Glennan, T. Keith. *The Birth of NASA: The Diary of T. Keith Glennan*. Hunley, J.D. Editor (NASA SP-4105, 1993).
- Seamans, Robert C., Jr. *Aiming at Targets: The Autobiography of Robert C. Seamans, Jr.* (NASA SP-4106, 1996).

Project Histories, NASA SP-4200

- Swenson, Loyd S., Jr., Grimwood, James M., and Alexander, Charles C. *This New Ocean: A History of Project Mercury* (NASA SP-4201, 1966; rep. ed. 1998).
- Green, Constance McL., and Lomask, Milton. *Vanguard: A History* (NASA SP-4202, 1970; rep. ed. Smithsonian Institution Press, 1971).
- Hacker, Barton C., and Grimwood, James M. *On Shoulders of Titans: A History of Project Gemini* (NASA SP-4203, 1977).
- Benson, Charles D. and Faherty, William Barnaby. *Moonport: A History of Apollo Launch Facilities and Operations* (NASA SP-4204, 1978).
- Brooks, Courtney G., Grimwood, James M., and Swenson, Loyd S., Jr. *Chariots for Apollo: A History of Manned Lunar Spacecraft* (NASA SP-4205, 1979).
- Bilstein, Roger E. *Stages to Saturn: A Technological History of the Apollo/Saturn Launch Vehicles* (NASA SP-4206, 1980, rep. ed. 1997).
- SP-4207 not published.**
- Compton, W. David, and Benson, Charles D. *Living and Working in Space: A History of Skylab* (NASA SP-4208, 1983).
- Ezell, Edward Clinton, and Ezell, Linda Neuman. *The Partnership: A History of the Apollo-Soyuz Test Project* (NASA SP-4209, 1978).
- Hall, R. Cargill. *Lunar Impact: A History of Project Ranger* (NASA SP-4210, 1977).
- Newell, Homer E. *Beyond the Atmosphere: Early Years of Space Science* (NASA SP-4211, 1980).
- Ezell, Edward Clinton, and Ezell, Linda Neuman. *On Mars: Exploration of the Red Planet, 1958–1978* (NASA SP-4212, 1984).
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- Swanson, Glen E. Editor. *"Before This Decade Is Out . . .": Personal Reflections on the Apollo Program* (NASA SP-4223, 1999).

Center Histories, NASA SP-4300

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- Dawson, Virginia P. *Engines and Innovation: Lewis Laboratory and American Propulsion Technology* (NASA SP-4306, 1991).
- Dethloff, Henry C. “*Suddenly Tomorrow Came . . .*”: *A History of the Johnson Space Center* (NASA SP-4307, 1993).
- Hansen, James R. *Spaceflight Revolution: NASA Langley Research Center from Sputnik to Apollo* (NASA SP-4308, 1995).
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- Wallace, Lane E. *Dreams, Hopes, Realities: NASA’s Goddard Space Flight Center, The First Forty Years* (NASA SP-4312, 1999).

General Histories, NASA SP-4400

- Corliss, William R. *NASA Sounding Rockets, 1958–1968: A Historical Summary* (NASA SP-4401, 1971).
- Wells, Helen T., Whiteley, Susan H., and Karegeannes, Carrie. *Origins of NASA Names* (NASA SP-4402, 1976).
- Anderson, Frank W., Jr. *Orders of Magnitude: A History of NACA and NASA, 1915–1980* (NASA SP-4403, 1981).
- Sloop, John L. *Liquid Hydrogen as a Propulsion Fuel, 1945–1959* (NASA SP-4404, 1978).
- Roland, Alex. *A Spacefaring People: Perspectives on Early Spaceflight* (NASA SP-4405, 1985).
- Bilstein, Roger E. *Orders of Magnitude: A History of the NACA and NASA, 1915–1990* (NASA SP-4406, 1989).
- Logsdon, John M. Editor. With Lear, Linda J., Warren-Findley, Jannelle, Williamson, Ray A., and Day, Dwayne A. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume I: Organizing for Exploration* (NASA SP-4407, 1995).

- Logsdon, John M. Editor. With Day, Dwayne A., and Launius, Roger D. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume II: External Relationships* (NASA SP-4407, 1996).
- Logsdon, John M. Editor. With Launius, Roger D., Onkst, David H., and Garber, Stephen E. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume III: Using Space* (NASA SP-4407, 1998).
- Logsdon, John M. Editor. With Williamson, Ray A., Launius, Roger D., Acker, Russell J., Garber, Stephen J., and Friedman, Jonathan L. *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume IV: Accessing Space* (NASA SP-4407, 1999).

Acronym. ACRIM-II. Full name. Active Cavity Radiometer Irradiance Monitoring - II. Purpose. Total solar irradiance monitoring. Follow-on of ACRIM-I flown on SMM. Scanning Technique. Sun pointing during orbital movement, data sampled each 2 min. The G103 Twin II (originally designated the G 118) is a German high performance two-seater sailplane made by Grob Aircraft. The aircraft is of T-tail configuration, and is fitted with a non retractable undercarriage and upper surface airbrakes. Of glass fibre construction, it is designed for training, high performance, and simple aerobatic flying. The G103 Twin II (a.k.a. the Twin Astir II) is the successor of the original G103 Twin Astir with a nose wheel and a fixed six-inch main gear fitted behind

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