

ANTONIE PANNEKOEK
1873-1960

Pannekoek was born on 2 January 1873 in Vaassen (province of Gelderland), the son of Johannes Pannekoek and Wilhelmina Dorothea Beins, members of the rural middle class. He studied astronomy at the University of Leiden, where he became an observer at the Astronomical Observatory in 1898. He took his doctorate in 1902 on a dissertation on the variable star Algol. The following year, he married Johanna Maria Nassau Noordewier. The program of meridian measurements instituted by Frederik Kaiser two decades earlier was too confining for Pannekoek, who considered these measurement of little scientific use. A devoted socialist, he had become a member of the SDAP (Social Democratic Worker's Party) in 1902, and in 1905 he left the observatory to accept a position at the Socialist party school in Berlin and later Bremen. He was an active contributor, and later editor, of *De Nieuwe Tijd* and emerged as an important theoretician of the left wing of the German SPD. In Germany, he regularly contributed theoretical articles to both *Die Neue Zeit* and *Bremer Bürgerzeitung*.

The First World War forced Pannekoek to return to the Netherlands, where he became teacher at secondary schools in several places. He also continued his political activities, adopting a revolutionary international position, contributing a number of articles to *Lichtstrahlen* and *Arbeiderspolitiek*, important left-wing journals. His political activities caused the Minister of Education to hold up and eventually, after the communist revolution in Hungary, to reject his appointment as vice-director of the Leiden Observatory. Pannekoek remained one of the most important theoreticians of international Socialist, and the Communist, movement. He is best known for his insistence on the autonomous action of the workers who after the revolution must organize themselves into independent, self-governing Worker's Councils.

If the Minister of Education could veto an appointment at the (national) University of Leiden, he did not have that power at the (municipal) University of Amsterdam, where Pannekoek had already been appointed lecturer of Mathematics and Astronomy in 1918. Seven years later he became professor. Pannekoek founded the Astronomical Institute of the University of Amsterdam, and his longer monographs on astronomical subjects appeared in its publica-

tions between 1924 and 1949. He was dismissed by the German government of the Netherlands in 1941.

At Amsterdam, Pannekoek became one of the founders of astrophysics in the Netherlands. He investigated the structure of the Milky Way through detailed photometric investigations, publishing his results on the northern hemisphere in 1924-29, and on the southern hemisphere in 1949. He also did important work on the atmospheres of stars: the abundance of hydrogen in stellar atmospheres, the quantitative analysis of the flash spectrum during a solar eclipse, and the low mass of giant stars.

From early in his career, Pannekoek was interested in the history of astronomy. His *Wonderbouw der wereld* (The Wonderful Construction of the Universe) introduced the reader to astronomy through its history; *De groei van ons wereldbeeld* (The Growth of Our World Picture), published in English as *A History of Astronomy*, was considered the most reliable general history of astronomy for three decades.

With his wife, Pannekoek was active in literary and musical circles in Amsterdam. He was a member of the Royal Netherlands Academy of Arts and Sciences since 1925 and received an honorary doctorate from Harvard University and the Gold Medal of the Royal Astronomical Society. He died 28 April 1960 in Wageningen.

Primary works

Poggendorff, vol. 4, 1116; vol. 5, 939-940; vol. 6, 1947-1948; vol. 7B, 3860-3861. His astronomical publications include: *Untersuchungen über den Lichtwechsel Algols* (Leiden, 1902 [doctoral dissertation]); *De astrologie en hare betekenis voor de ontwikkeling der sterrenkunde* (Leiden, 1916); 'Die Nördliche Milchstrasse', *Annalen van de Sterrewacht te Leiden* 11, no. 3 (1920); *Researches on the Structure of the Universe, Publications of the Astronomical Institute of the University of Amsterdam*, nos. 1-2 (1924-1929); 'The Ionization Formula for Atmospheres Not in Thermodynamic Equilibrium', *Bulletin of the Astronomical Institutes of the Netherlands* 3 (1926) 207-209; *Results of Observations of the Solar Eclipse of June 29, 1927. Photometry of the Flash Spectrum* (Amsterdam, 1928), with M. Minnaert; 'Die südliche Milchstrasse', *Annalen van de Bosscha Sterrewacht* 2, no. 1 (1929) 1-73; 'Die Ionisation in den Atmosphären der Himmelskörper', in: G. Eberhard, A. Kohlschütter, and H. Ludendorf, eds, *Handbuch der Astrophysik*, 7 vols, (Berlin: Springer, 1928-1936), III

(1) 256-350; 'The Theoretical Contours of Absorption Lines', *Monthly Notices of the Royal Astronomical Society* 91 (1930) 139-169, 519-531; *Photographische Photometrie der nördlichen Milchstrasse*, *Publications of the Astronomical Institute of the University of Amsterdam*, no. 3 (1933); 'Theoretical Colour Temperatures', *Monthly Notices of the Royal Astronomical Society* 95 (1935) 529-535; 'Ionization and Excitation in the Upper Layers of an Atmosphere', *Monthly Notices of the Royal Astronomical Society* 96 (1936) 785-93; 'The Hydrogen Lines Near the Balmer Limit', *ibid.*, 98 (1938) 694-709; *A Photometric Study of Some Stellar Spectra*, *Publications of the Astronomical Institute of the University of Amsterdam* no. 6, parts 1 and 2 (1939-1946), with G.B. van Albada; *Investigations on Dark Nebulae*, *ibid.* no. 7 (1942); 'The Line Spectra of Delta Cephei', *Physica* 12 (1946) 761-767; *Photographic Photometry of the Southern Milky Way*, *Publications of the Astronomical Institute of the University of Amsterdam*, no. 9 (1949), with D. Koelbloed; 'Line Intensities in Spectra of Advanced Types', *Publications of the Dominion Astrophysical Observatory, Victoria, B.C.* 8 (1950) 141-223.

Pannekoek's publications on popular astronomy and the history of astronomy include: *De Wonderbouw der wereld* (Amsterdam, 1916); *De groei van ons wereldbeeld. Een geschiedenis van de sterrekunde* (Amsterdam and Antwerp, 1951), translated as *A history of astronomy* (New York: Interscience, 1961); 'The Astronomical System of Herakleides', *Proceedings of the Koninklijke Nederlandse Akademie van Wetenschappen, Series B* 55 (1952) 373-381; 'Ptolemy's Precession', *Vistas in Astronomy* 1 (1955) 60-66; 'Planetary Theories', *Popular Astronomy* 55 (1947) 422-438, 56 (1948) 2-13; Simon Stevin, *Principal works*, 5 vols, ed. E. Crone et al. (Amsterdam: Swets and Zeitlinger, 1955-1966) vol. 3, Astronomy, edited by Pannekoek.

A list of Pannekoek's publications on the problems of the proletariat can be found in H.M. Bock, *Organisation und Taktik der proletarischen Revolution*, *Archiv der Sozialistischen Literatur*, no. 11 (Frankfurt, 1969). His philosophical and political publications include: 'Anthropogenese, een studie over het ontstaan van den mens', *Verhandelingen der Koninklijke Akademie van Wetenschappen* 42, no. 1 (1945), translated as *Anthropogenesis, a Study of the Origin of Man* (Amsterdam, 1953); *De arbeidersraden*, 2 parts (Amsterdam, 1947) translated into English as *Worker's Councils* (Melbourne, 1950), French trans., *Pannekoek et les conseils ouvriers; textes choisis, traduits et présentés par S. Bricianer* (Paris, 1969); *Ethik und Sozialismus: Umwälzungen im Zukunftsstaat. Zwei Vorträge* (Leipzig, 1906; Romanian trans., 1945); *Marxismus*

und Darwinismus (Leipzig, 1909; Spanish trans., 1937; Romanian trans., 1945); J. Harper (pseudonym), *Lenin als Philosoph. Kritische Betrachtungen der philosophischen Grundlagen des Leninismus* (Amsterdam, 1938, 2d ed., Frankfurt a.M., Vienna, 1969; English trans., New York, 1948; Dutch trans., Amsterdam, 1974).

For his memoirs, see A. Pannekoek, *Herinneringen. Herinneringen uit de arbeidersbeweging. Sterrenkundige herinneringen*, with contributions of B.A. Sijes and E.P.J. van den Heuvel (Amsterdam, 1982).

Secondary sources

H.L. Vanderlinden, 'In Memoriam Prof. A. Pannekoek', *Jaarboek van de Koninklijke Vlaamse Akademie voor Wetenschappen, Letteren en Schoone Kunsten van België* 22 (1960) 235-236; B.J. Bok, 'Two Famous Dutch Astronomers', *Sky and Telescope* 20 (1960) 74-76; C. Malandrino, *Scienza e socialismo: Anton Pannekoek (1873-1960)* (Milan: Angeli, 1987); J.P. Gerber, *Anton Pannekoek and the socialism of workers' self-emancipation, 1873-1960* (Dordrecht and Boston: Kluwer, 1989); E.P.J. van den Heuvel, 'Antonie Pannekoek (1873-1960). Socialist en sterrenkundige', in: J.C.H. Blom et al., eds, *Een brandpunt van geleerdheid in de hoofdstad. De Universiteit van Amsterdam rond 1900 in vijftien portretten* (Amsterdam, 1992) 229-245.

M. Minnaert, in: *DSB*, vol. 10, 289-291.

[A.v.H.]