

astronomer, Theodor Ritter von Oppolzer. It contains tables giving data about all eclipses (8,000 solar and 5,200 lunar) occurring between Nov. 10, 1207 B.C. (Julian Calendar) and Nov. 17, 2161 A.D. (Gregorian Calendar). There are also 160 maps, showing the approximate paths over which all the total eclipses of the sun were or will be visible. The original Vienna edition of Oppolzer's Canon is now very rare, but in 1962 Dover Publications, Inc., issued a new edition, with an English translation of the German text.

Celestial Time Table for January

(From 1964 Observer's Handbook of the Royal Astronomical Society of Canada)

JAN.	EST	
1	2:00 a.m.	Algol (variable star in Perseus) at minimum brightness
2		Earth nearest sun, distance 91,345,000 miles
3	10:50 p.m.	Algol at minimum
4	9:00 a.m.	Mercury between earth and sun
6	10:58 a.m.	Moon in last quarter
	7:40 p.m.	Algol at minimum
9	4:30 p.m.	Algol at minimum
	5:00 p.m.	Venus passes Saturn
	7:00 p.m.	Moon farthest from earth, distance 251,900 miles
14	3:44 p.m.	New moon (partial eclipse of sun visible from Antarctica)
16	8:00 p.m.	Moon passes Saturn
17	noon	Moon passes Venus
20	2:00 p.m.	Moon passes Jupiter
22	12:29 a.m.	Moon in first quarter
24	12:40 a.m.	Algol at minimum
25	8:00 p.m.	Moon nearest, distance 227,200 miles
26	7:00 p.m.	Mercury farthest west of sun (low in east before sunrise for a few days)
	9:30 p.m.	Algol at minimum
28	6:23 p.m.	Full moon
29	6:20 p.m.	Algol at minimum

Subtract one hour for CST, two hours for MST, and three hours for PST.

• Science News Letter, 84:406 Dec. 28, 1963

ASTRONOMY

Strong X-Ray Source Found in Milky Way

► THE MILKY WAY GALAXY in which the sun, earth and other planets are located contains a strong X-ray source near the constellation of Scorpius, the scorpion, scientists have confirmed by rocket observations.

The source can be "seen" only by instruments flown above the earth's obscuring atmosphere. This has now been done in rockets and is planned for an Orbiting Solar Observatory scheduled to be lofted into orbit in 1965.

The observations were made last June with an Aerobee rocket launched from White Sands, N. Mex., and hurled to a height of 140 miles. They showed the X-ray source in the same part of the sky in which it had been seen for the first time a year before. Geiger counters were used to detect the X-rays.

The scientists who confirmed the existence of the source, Drs. Herbert Gursky, Riccardo Giacconi and Frank Paolini of American Science and Engineering, Inc., Cambridge, Mass., and Dr. Bruno Rossi of Massachusetts Institute of Technology, Cambridge, reported their study in Physical Review Letters, Dec. 15, 1963.

• Science News Letter, 84:407 Dec. 28, 1963

GENERAL SCIENCE

Recipients of National Medal of Science Named

► PRESIDENT LYNDON B. JOHNSON announced five scientists as the 1963 recipients of the National Medal of Science.

Those honored and their citations are:

Dr. Luis Walter Alvarez, professor of physics and associate director of the Lawrence Radiation Laboratory, for "inspiring leadership in experimental high energy physics, continuing development of the bubble chamber, discovery of many states of elementary particles, and contributions to national defense."

Dr. Vannevar Bush, well-known engineer-scientist-administrator, for "distinguished achievements in electrical engineering, in the technology of computing machines, in the effective coupling of the physical and life sciences; and in mobilizing science, engineering and education in enduring ways in the service of the Nation."

Dr. John Robinson Pierce, executive director, research-communications principles and communications systems divisions, Bell Telephone Laboratories, for "outstanding contributions to communications theory, electron optics and travelling wave tubes, and for the analysis leading to world-wide radio communications using artificial earth satellites."

Dr. Cornelius Bernardus van Niel, Hopkins Marine Station of Stanford University, for "fundamental investigations of the comparative biochemistry of microorganisms, for studies of the basic mechanisms of photosynthesis, and for excellence as a teacher of many scientists."

Dr. Norbert Wiener, professor emeritus of the department of mathematics, Massachusetts Institute of Technology, for "marvellously versatile contributions, profoundly original, ranging within pure and applied mathematics, and penetrating boldly into the engineering and biological sciences." Dr. Wiener was the developer of the comprehensive notion of cybernetics.

The National Medal of Science was established by the 86th Congress to be awarded by the President to individuals "who in his judgment are deserving of special recognition by reason of their outstanding contributions to knowledge in the physical, biological, mathematical or engineering sciences." The awards are made on the basis of recommendations received from the President's Committee on the National Medal of Science.

The awards will be presented by the President at a ceremony in January.

• Science News Letter, 84:407 Dec. 28, 1963

Do You Know?

Nitrates, chemicals sometimes found in cattle fodder, interfere with the animal's conversion and utilization of vitamin A.

Gout, an inflammation of the joints, is found more frequently in business executives than in any other group.

Telephone conversations have been held over a distance of 7,700 miles using the U. S. Syncom II communications satellite.

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70,870-Q	10" sq.	13 1/2"	6.00 Ppd.
70,533-Q	11 1/2" sq.	19"	6.00 Ppd.
70,130-Q	14" round	14"	6.00 Ppd.
30,389-Q	2 1/2" x 2 1/2"	2 1/2"	2.49 Ppd.
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