



JANUARY 2023

S	M	T	W	Th	F	Sa
1 New Year's Day	2	3	4	5	6 ○	7
8	9	10	11	12	13	14 ◐
15	16 Martin Luther King, Jr.	17	18	19	20	21 ●
22	23	24	25	26	27	28 ◑
29	30	31				

J2030

This image shows the pulsar known as PSR J2030+4415 in X-rays from Chandra (blue) and optical light from the Gemini telescope in Hawaii (appearing as red, brown, and black). The left panel shows about one third the length of an extremely long filament, or beam, from the pulsar detected in Chandra data. The right panel contains a close-up where the X-rays are created by particles flying around the pulsar itself. As the pulsar moves through space at about half a million miles an hour, some of these particles escape and create the long filament. This beam may help explain the surprisingly large numbers of positrons, the anti-matter counterparts to electrons, scientists have detected at Earth.

Credit: X-ray: NASA/CXC/Stanford Univ./M. de Vries; Optical: NSF/AURA/Gemini Consortium