



JULY 2023

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2	3 ○	4 Independence Day	5	6	7	8
9 ☾	10	11	12	13	14	15
16	17 ●	18	19	20	21	22
23	24	25 ☾	26	27	28	29
30	31					

SMACS 0723.3–7327

Webb brilliantly shows how the galaxy cluster SMACS J0723, located about 4.2 billion light-years away, contains hundreds of individual galaxies. Galaxy clusters, however, contain much more. As some of the largest structures in the universe, they are filled with vast reservoirs of superheated gas that is seen only in X-ray light. In this image, the Chandra data (blue) reveals gas with temperatures of tens of millions of degrees, possessing a total mass of about 100 trillion times that of the Sun, several times higher than the mass of all the galaxies in the cluster. Invisible dark matter makes up an even larger fraction of the total mass in the cluster.

Credit: X-ray: NASA/CXC/Durham Univ./G. Mahler; IR: NASA/ESA/CSA/STScI