

The date of perihelion (T), period (P), perihelion distance (q) and the magnitude parameters H and G are given for each comet which comes to perihelion in 2023 and which becomes brighter than magnitude 18 and for other comets which are expected to be brighter than 14th magnitude during the year. The table also gives the date that the comet is expected to be at its brightest, its declination, elongation and expected peak magnitude. A negative elongation indicates that the comet is best in the evening sky.

The magnitude parameters are taken from determinations by the Comet Section or the comet observation website (COBS) (as indicated by ‘*’ or ‘C’ in the Notes column) or from elements downloaded from the MPC. The predicted total magnitude is given by:

$$m_1 = H + 2.5 G (\log_{10} r) + 5 (\log_{10} \Delta)$$

where Δ is the distance of the comet from Earth and r is its distance from the Sun, both in astronomical units. It is important to remember that comet magnitude predictions are often very uncertain and can be misleading, particularly for non-periodic comets with small perihelion distances. In particular, comets which show apparently bright magnitudes at very small elongations are unlikely to be observable. The table is derived from orbital elements downloaded from the Minor Planet Center (MPC) on 2022 July 24 and it is sorted in order of the date at which the comet reaches its brightest magnitude. A digital version containing more information is available from the Comet Section website at britastro.org/comet. This website contains links to many other resources useful to the comet observer, such as the Comet Section observing guide which is available for download as a PDF.

There are no particularly bright comets expected in 2023 although there are some interesting prospects.

Comet **C/2017 K2 (PanSTARRS)** was discovered on 2017 May 21 when it was over 16 au from the Sun and it finally came to perihelion at the end of 2022. It has been well observed from the northern hemisphere as it approached the Sun and it will continue to be a good object into the first half of 2023 although it will be too far south for observation from northern latitudes when at its best.

Comet **C/2022 E3 (ZTF)** was discovered by the Zwicky Transient Facility on 2022 March 2 when it was a 17th magnitude, apparently asteroidal, object in Aquila. It comes to perihelion on 2023 January 12 and comes within 0.3 au of the Earth on February 1 when it might reach 6th magnitude as it rushes across the sky near to the pole. See the chart on [page xx](#).

A number of periodic comets come to perihelion in 2023 and should get bright enough to be visible in small telescopes or binoculars from dark sites. Of these, the brightest is **2P/Encke**. By April the comet should be visible as a 16th magnitude object in Aquila. It brightens through the summer moving into Cygnus by June when it should be around 14th magnitude. It will be at its brightest in October when it may reach 6th magnitude. See the chart on [page xx](#).

29P/Schwassmann-Wachmann is a comet in a nearly circular orbit with a period of 14.8 years. The comet is at opposition at the start and end of the year and conjunction on July 14. It is well north of the celestial equator which makes it a good target from northern latitudes and a chart showing its position is on [page xx](#). It spends most of the time at around 16th magnitude but has frequent outbursts. It makes a close approach to M44 (Praesepe) at the end of the year. It should be kept under observation as regularly as possible using the methods outlined on the Comet Section’s Mission 29P page.

[Chart captions should say something like “Chart produced using Megastar 4”]

T	Pyr	q(AU)	H	G	Note	Peak	Dec	Elong	Mag	Name
	2022-08-11	7.42	2.33	9.0	3.2 *	Jan-01		22	163	13.2 119P/Parker-Hartley
	2022-09-09	6.67	1.57	10.0	4.0	Jan-01	-6.3	107		13.6 157P/Tritton
	2022-12-08	8.07	1.62	8.5	6.0 *	Jan-01	-25.5	16		13.7 80P/Peters-Hartley
	2022-12-15	6.42	1.60	3.3	9.9 *	Jan-01	-12.6	60		9.7 81P/Wild
	2023-06-28	9.81	3.73	4.5	6.0 *	Jan-01	15.9	-153		15.5 121P/Shoemaker-Holt
	2023-01-06	5.92	1.79	10.0	4.0	Jan-02	-26.8	-7		14.7 P/2013 YG46 (Spacewatch)
	2022-11-24	6.12	1.83	9.3	3.8 *	Jan-11	10.1	159		11.7 118P/Shoemaker-Levy
	2022-12-19		1.80	1.5	4.0 C	Jan-14	-69.2	48		8.0 C/2017 K2 (PANSTARRS)
	2023-02-18		1.74	9.5	4.0	Jan-25	58.5	81		13.0 C/2022 A2 (PANSTARRS)
	2023-01-31	5.27	0.12	16.1	3.7 *	Jan-31	-15.3	-4		7.2 96P/Machholz
	2023-01-12		1.11	7.5	4.0 C	Feb-01	75.3	-120		5.4 C/2022 E3 (ZTF)
	2023-01-30	5.31	1.24	9.0	4.0	Feb-01	25.5	132		7.6 263P/Gibbs
	2023-01-21	27.21	3.50	10.0	4.0	Feb-03	-0.3	163		17.5 P/2021 V2 (Fuls)
	2023-02-09		3.37	8.5	3.2	Feb-07	25.3	-170		14.6 C/2020 S4 (PANSTARRS)
	2023-01-22	5.56	1.59	10.5	2.4 *	Feb-11	-25	26		13.6 71P/Clark
	2023-05-21	6.57	2.23	9.0	6.0 *	Feb-17	28.8	-151		15.2 94P/Russell
	2023-07-12	7.60	2.50	11.0	4.0	Feb-23	37.9	-149		16.5 180P/NEAT
	2023-03-29		3.62	4.5	4.0	Mar-25	-1.4	-178		12.2 C/2019 U5 (PANSTARRS)
	2023-04-11	4.43	0.83	16.0	4.0	Apr-06	-7.1	30		16.2 300P/Catalina
	2023-05-14	4.89	0.80	17.0	2.0	Apr-09	22	74		12.4 364P/PANSTARRS
	2022-09-16		2.96	7.0	3.2	Apr-11	15.3	107		13.9 C/2020 R7 (ATLAS)
	2023-04-03	6.90	2.35	5.6	8.0 *	Apr-22	-29.4	162		13.7 77P/Longmore
	2023-03-12	9.99	2.70	14.0	2.0 *	May-02	11.3	152		17.4 256P/LINEAR
	2023-04-30		2.03	7.0	4.0	May-09	-25.7	-52		12.1 C/2021 Y1 (ATLAS)
	2023-02-11		3.24	9.0	4.0	May-14	-76.9	109		16.6 C/2021 C5 (PANSTARRS)
	2023-05-09		3.07	5.5	4.0	Jun-05	-75	118		12.4 C/2020 K1 (PANSTARRS)
	2023-06-15	8.94	0.78	17.5	10.0	Jun-14	16.5	31		15.6 72P/Denning-Fujikawa
	2023-05-14	6.58	1.99	4.2	8.0 *	Jun-25	-2.6	147		10.5 237P/LINEAR
	2023-08-07	14.28	2.91	10.0	4.0	Jul-01	-25.1	-174		16.1 199P/Shoemaker
	2023-07-12	5.45	0.93	10.7	7.8 *	Jul-10	22.5	36		11.0 185P/Petrew
	2023-11-11	6.12	1.98	10.5	4.0	Jul-16	-33.7	-139		14.5 213P/VaNess
	2023-07-31		1.48	7.5	4.0	Jul-21	-56.1	-144		7.9 C/2021 T4 (Lemmon)
	2023-07-05	13.38	1.71	8.5	6.0 *	Aug-13	32.7	93		12.9 126P/IRAS
	2023-08-21	3.97	0.05	22.1	5.1 *	Aug-21	13.7	3		5.5 322P/SOHO
	2023-05-08		2.23	4.9	4.0	Sep-02	-12.3	121		10.5 C/2020 V2 (ZTF)
	2023-11-14		10.31	2.5	4.0	Sep-02	-71.8	-93		17.7 C/2019 E3 (ATLAS)
	2023-12-26	5.21	1.75	14.5	4.0	Sep-02	-36.2	-127		17.9 P/2018 P3 (PANSTARRS)
	2023-05-27		3.23	7.0	4.0	Sep-18	7.1	158		14.3 C/2021 X1 (Maury-Attard)
	2023-09-30	5.05	1.12	14.0	6.0 *	Oct-01	-7.6	-8		16.4 79P/du Toit-Hartley
	2023-10-12	6.48	1.06	9.0	13.3 *	Oct-08	25.1	89		7.9 103P/Hartley
	2023-10-21	3.31	0.34	11.7	4.6 *	Oct-21	-5.9	12		6.7 2P/Encke
	2023-10-26	3.77	0.05	20.0	4.0	Oct-27	-13.4	-1		7.4 321P/SOHO
	2023-12-27	7.31	1.77	6.0	6.0 *	Nov-23	-36.4	-108		10.3 226P/Pigott-LINEAR-Kowalski
	2023-11-17	5.32	0.65	18.5	4.0	Dec-11	-5.1	-50		15.6 P/2007 T2 (Kowalski)
	2023-09-28		3.70	8.0	4.0	Dec-12	-62.3	82		16.6 C/2022 A3 (Lemmon-ATLAS)
	2023-12-25	5.24	1.08	12.0	16.0 *	Dec-25	-20	31		14.7 26P/Grigg-Skjellerup
	2023-12-24	6.17	1.26	7.2	8.0 *	Dec-31	12.8	110		7.8 62P/Tsuchinshan
	2024-01-25	7.48	1.40	5.5	7.5 *	Dec-31	14.4	-129		7.2 144P/Kushida
	2024-02-14		1.32	5.5	4.0	Dec-31	-37.9	51		8.6 C/2021 S3 (PANSTARRS)
	2024-03-07	5.53	1.53	9.0	4.0	Dec-31	-11.4	52		12.8 125P/Spacewatch
	2024-03-12		2.69	6.5	4.0	Dec-31	-17.5	44		13.6 C/2022 L2 (ATLAS)
	2024-04-21	71.14	0.78	5.0	6.0 *	Dec-31	37.7	-62		11.3 12P/Pons-Brooks
	2024-07-01	68.76	1.18	5.0	6.0 *	Dec-31	-15.7	-115		13.3 13P/Olbers
	2025-03-10	7.50	3.08	6.0	4.0	Dec-31	34.8	156		13.6 P/2010 H2 (Vales)





