

PROFESSOR COMET REPORT

MARCH 2010

The Bright Comets for 2010!

C/2009 K5 (McNaught)

This comet is currently bright at a visual magnitude of 9.1 and expected to reach visual Mag 8.8 by 27 March 2010. Then the comet is now predicted to reach a maximum brightness of 8th magnitude by early April and stay at least above 9th magnitude through mid - May. It will be in good position in the western half of the constellation Aquila as it will rise earlier in the morning sky throughout the procession of spring. It is presently located to the north of the western wing of Aquila about 172" of right ascension to the West and just under 8'8" of Dec to the north of HD 183144 which has a visual Mag of 6.32 and spectral class of B4III as of 22 March 2010.

Recent comet observations show only a slightly elongated coma, but no dust tail is currently visible as of now. The coma has an estimated size of 6', but that could get larger by a few more arcminutes as the comet approaches its maximum brightness. It currently has a solar elongation of 72° with a solar distance of 1.5202 AU placing it inside the orbit of Mars with a slightly shorter distance to Earth of 1.5033 AU. The degree of condensation as reported by Brian Cudnik of HAS is 6 and reported it to be spherical in shape. However, he reported seeing the comet in similar brightness to 81P/Wild (Visual Mag of 9.5)!

Expect the comet to progress rapidly through the spring nights as it move through the summer triangle passing to the West of Sagitta by a few degrees during the week of 22 March 2010 and then pass through the East section of Vulpecula during the night of 31 March/1 April. By April 3rd the comet will be just less than 10.5' of RA to the East of Albireo around 04:00 till sunrise local time (CST). As McNaught is predicted to be above 9th Magnitude (a whole magnitude in brightness above what the MPC has predicted) until at least 14 May 2010 it will have moved through Cygnus squeezing by (χ Cygni) just to it's East just before sunset on 6 April. Then it will have crossed the

Western wing of Cygnus the mid afternoon of 13 April more than halfway to δ Cygni from Sadr (the center of the northern cross) also known as δ Cygni. It will then have moved to the East of 33 Cygni by 22 April. Expect McNaught to fly along the East side of Cepheus thru late April and then be the far North of Cepheus about 3° to the South of NGC 188 by 15 May!

MPC Ephemeris data for C/2009 K5 McNaught:

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1
2010 03 20		19 19.63	+10 32.9	1.568	1.539	69.7	37.4	10.3
2010 03 25		19 26.67	+15 58.7	1.480	1.513	72.3	38.9	10.2
2010 03 30		19 34.13	+22 02.5	1.404	1.491	74.5	40.2	10.0
2010 04 04		19 42.17	+28 43.0	1.342	1.471	76.2	41.3	9.8
2010 04 09		19 51.07	+35 55.0	1.297	1.454	77.3	42.2	9.7
2010 04 14		20 01.23	+43 28.6	1.271	1.441	77.7	42.8	9.6
2010 04 19		20 13.30	+51 09.8	1.264	1.431	77.3	43.2	9.6
2010 04 24		20 28.44	+58 42.0	1.278	1.425	76.2	43.3	9.6
2010 04 29		20 48.87	+65 49.2	1.310	1.422	74.4	43.0	9.6
2010 05 04		21 19.19	+72 16.1	1.359	1.424	72.2	42.4	9.7
2010 05 09		22 10.09	+77 45.6	1.421	1.428	69.6	41.5	9.8
2010 05 14		23 45.33	+81 43.3	1.494	1.437	66.8	40.3	9.9

Note that the visual magnitude now being reported are estimated to be at least 0.5 mag brighter than what the MPC was predicting and could reach 1.5 magnitudes brighter by April. Also the m2 (nuclear magnitude) is not reported!

81P/Wild 2

Wild 2 is now currently in Eastern part of Virgo forming a 'Corvus - shaped' asterism with Iota Virginis, HD 124553, and HD 124915 for the evening of 23/24 March. The other star being HD 124426 at 10th visual magnitude, K0 class star which the comet has passed through. It is has a solar elongation of 149° with a solar distance of 1.6238 AU and a distance from Earth of 0.6874 AU as of 23 March 2010 with is close to average Venus - Sun distance. Currently as maximum brightness of visual Mag 9.2 was reported on 18 March and the comet is expect to maintain a magnitude range of 9 - 10 until the end of April. Then it will start to dim below 10th magnitude by 9 May and continue to dim even further through the summer reaching 16th magnitude by the Tuesday (Oct 26) before Halloween.

A visual report by Brain Cudnik indicates a coma diameter of 1.5 arcminutes with a dust tail 2.5 arcminutes long and a degree of condensation of 7. The comet has already passed its minimum solar distance of 1.598 AU during 23 February 2010 as is now moving away from the Sun. However, its distance from Earth will reach a minimum of 0.674 AU during the week of April 4 - 9, 2010. Therefore I would not expect the comet to get much bigger than what is currently reported; maybe the tail may get 1 or 2 arcminutes longer, but not much more.

During early April starting on 2 April the comet will graze slightly to the ENE of HD 124553 which has a visual magnitude of 6.36 with a spectral classification of F9V. During April thru May the comet will be retrograde motion which has started during the last week of March. The comet will move Westward thru Virgo and then turn East again by 20 May looping around HD 122815 at visual magnitude of 6.39 with a spectral classification of K0. By that time the comet will have passed both perigee and perihelion. By the time comet is sailing south of the 'Corvus - like' asterism with the lead star being Iota Virginis during the week of 13 June 2010 the comet will have dimmed to 11.4 magnitude.

Note: Iota Virginis has a visual magnitude of 4.08 and a color index of 0.52 making a stellar classification of F6III. It is also known by its common name Syrma derived from Arabic meaning 'train' of the garment; this is in reference to the garment worn by Virgo.

MPC Ephemeris data for C/2009 K5 McNaught:

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2010 03 20		14 12.73	-06 38.9	0.696	1.618	145.4	20.5	9.3	18.3
2010 03 25		14 14.23	-06 24.7	0.685	1.626	149.9	17.9	9.3	18.2
2010 03 30		14 14.81	-06 08.3	0.677	1.636	154.6	15.2	9.4	18.1
2010 04 04		14 14.58	-05 50.5	0.674	1.647	159.3	12.4	9.4	18.0
2010 04 09		14 13.64	-05 32.6	0.674	1.660	164.0	9.6	9.4	17.9
2010 04 14		14 12.17	-05 15.9	0.679	1.674	168.4	6.9	9.5	17.8
2010 04 19		14 10.36	-05 01.6	0.689	1.689	171.6	5.0	9.6	17.7
2010 04 24		14 08.44	-04 50.8	0.704	1.705	172.1	4.6	9.7	17.8
2010 04 29		14 06.59	-04 44.2	0.723	1.723	169.5	6.1	9.8	18.0
2010 05 04		14 04.98	-04 42.5	0.747	1.741	165.4	8.4	10.0	18.2
2010 05 09		14 03.75	-04 45.9	0.775	1.761	160.9	10.8	10.1	18.4

C/2007 Q3 (Siding Spring)

Siding spring did reach a maximum brightness of magnitude 9.5 back on 13 Jan 2010. It is currently at a magnitude of 11.4 and lies in the constellation of Draco in the far northern celestial sky. It is nearly 40' to the south of Iota Draconis (Ed Asich) at visual magnitude 3.29 with a stellar classification of K2III for the week of 22 March 2010. The comet is fading at a more rapid rate than it was predicted by the MPC since by this time it should be at a brighter magnitude of 11.1. Some reported have indicated that the comet is dimming fast towards 12th magnitude with a coma diameter around 10 - 20 arcseconds and a tail only a few arcminutes long.

As of 23 March the comet has a solar elongation of 110° with a solar distance of 2.928 AU and an Earth distance of 2.4401 AU placing the comet beyond the orbit of Mars. The comet based on the original MPC ephemeris data shows siding spring fading to 12th magnitude by 9 May, but it might end up being one magnitude fainter than this by that time. From now until 9 May the comet will be moving, north northwest toward Ursa Minor until 13 April and make a northwesterly direction after passing to the west of HD136402. Then the comet will head due west as it moves about 37 arcminutes to the South of 7.84 magnitude star HD 132166 with a spectral classification of K0 on 6 May 2010 before sunset. The comet will go under a huge retrograde motion during the summer as it turns south towards Boötes reaching the north of that constellation by mid July.

From the late summer towards early fall 2010 siding spring will have dimmed from at least 13th to 14th magnitude. By 3 September the comet will have left its retrograde motion heading east towards Hercules and crossing the western boundary of the keystone by 4 November about 2° to the south of M13. However, the comet will have dimmed to nearly 15th magnitude if not fainter than that and will be at a solar distance of 4.6867 AU and an Earth distance of 5.1354 AU. This means it will be approaching the orbit of Jupiter as it heads out to the outer Solar System.

MPC Ephemeris data for C/2009 K5 McNaught:

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2010 03 20		15 23.30	+57 07.0	2.407	2.903	110.0	18.8	11.0	
2010 03 25		15 23.44	+58 31.2	2.452	2.937	109.3	18.7	11.1	
2010 03 30		15 22.63	+59 46.3	2.499	2.971	108.5	18.6	11.2	
2010 04 04		15 20.92	+60 52.2	2.550	3.006	107.5	18.5	11.3	
2010 04 09		15 18.36	+61 48.4	2.602	3.041	106.4	18.4	11.4	
2010 04 14		15 15.06	+62 34.7	2.657	3.077	105.3	18.3	11.5	
2010 04 19		15 11.15	+63 11.1	2.713	3.113	104.0	18.2	11.6	
2010 04 24		15 06.79	+63 37.5	2.771	3.150	102.8	18.1	11.7	
2010 04 29		15 02.19	+63 54.3	2.830	3.186	101.4	18.0	11.8	
2010 05 04		14 57.50	+64 01.8	2.890	3.223	100.1	17.9	11.9	
2010 05 09		14 52.91	+64 00.3	2.951	3.261	98.7	17.8	12.0	
2010 05 14		14 48.59	+63 50.5	3.013	3.298	97.4	17.7	12.1	
2010 05 19		14 44.66	+63 32.8	3.075	3.336	96.0	17.6	12.2	

The Faint Comets of 2010!

C/2006 W3 (Christensen)

Last summer this comet did reach a maximum brightness of visual magnitude 7.7 and now by some observation reports on the comet observations yahoo group that it has faded to 11.2 magnitude as of 13 March. Although the MPC ephemeris data indicates it should have faded to 14th magnitude by late January 2010. The comet is located in the SW region of Capricornus about 26' to 31' of RA to East of (Omega & Psi Capricorni). As of 24 March the comet has a solar elongation of 63° with a solar distance of nearly 4 AU and has a distance from Earth of 4.346 AU.

The comet is now moving southward towards the southern region of Sagittarius and then head towards the SW moving between **Arkab prior** (beta 1 Sagittarii) and **Rukbat** (alpha Sagittarius) during the night of 14/15 June. Expect the comet to be visible, but extremely low in the southern skies visible from Texas until it heads into northern Ara by late August and will be too low to discernible as the comet dims to mid 15th Magnitude.

Comet 29P/Schwassmann - Wachmann 1

Comet 29P/SW 1 has undergone an outburst that begun on Feb 2 and continue through mid - March reaching a maximum brightness of visual magnitude 10.8 on March 18. Currently the comet has dimmed a bit and is now down to visual magnitude 11.7. 29P is currently predicted to dim around mid 15th visual magnitude by the end of this month and through April. It should reach 16th magnitude by starting 24 May and progressive get dimmer after that.

To see this comet or more likely take pictures of it is currently located on the eastern edge of the constellation of Cancer moving towards Leo about 1/3 of the way between Acubens (α Cancri) and Regulus (α Leonis) while being about 1° 29' 34" north of the line between the two stars for 23 March 2010. It is currently at a solar elongation of 135° with a solar distance of 6.2012 AU and a distance of 5.4532 AU from Earth placing it beyond the orbit of Jupiter. It is currently going under retrograde motion between Acubens and Regulus and it is moving westward until the 3rd week of April then it progress eastward again moving through the SW region of Leo by August 3. The comet will of course be lost in the daytime since the Sun will be passing between the two constellations by that time.

C/2009 O2 (Catalina)

Originally predicted by the MPC to reach a maximum brightness of magnitude 9.0 - 9.1 for the final week of March, some visual observation reports have shown this comet to reach a brightness of magnitude 9.8! It appears it is not as bright now as it was back in early January. However, this comet is currently to the north of the Andromeda galaxy which is in daytime, so any accurate determine of comet brightness is impossible at this time. Catalina is moving fairly quickly to the East moving thru Perseus by early April. The comet will move thru the winter constellations of Orion & Canis Major during the summer while never having a solar elongation greater than 70°. There were reports back in early March when the comet was better visible in the north when the comet was to the south of Cygnus of it having no tail and being very diffuse as if it is disintegrating. Catalina will reach a minimum solar distance of just 0.695 AU on 25 March 2010.

C/2009 R1 (McNaught)

This is a future comet that is expected to be the big one for 2010; as the ultimate bright comet for this year! As of the last week of March R1 McNaught is residing in the north central region of Aquarius during the daytime with an MPC predicted magnitude of 13.4. This comet is predicted to reach a maximum brightness of magnitude 4.7 during the period of 28 June thru 3 July, but some predictions may place it even brighter at 4th magnitude. The comet will move in an ENE direction towards the SE region of the great square of Pegasus thru mid to late May and reach Perseus by early thru mid June. When it reaches its period of maximum brightness its solar elongation values will be between 14° - 19° when the comet will reach a minimum solar distance of 0.405 AU on 3 July 2010. During this period McNaught is moving SE from Menkalinan (Beta Aurigae) and then fly past both Pullox and Castor during the 1st week of July. The next time the comet will be visible at night it be visible only from the Southern hemisphere and will have dimmed to below 11th magnitude!

All of the remaining comets of interest for the year are presently no brighter than 11th - 13th magnitude range for the rest of the spring season!