

Mars Rendezvous

**COMET C/2013 A1  
(SIDING SPRING)**

Presentation as at 18<sup>th</sup> August 2014

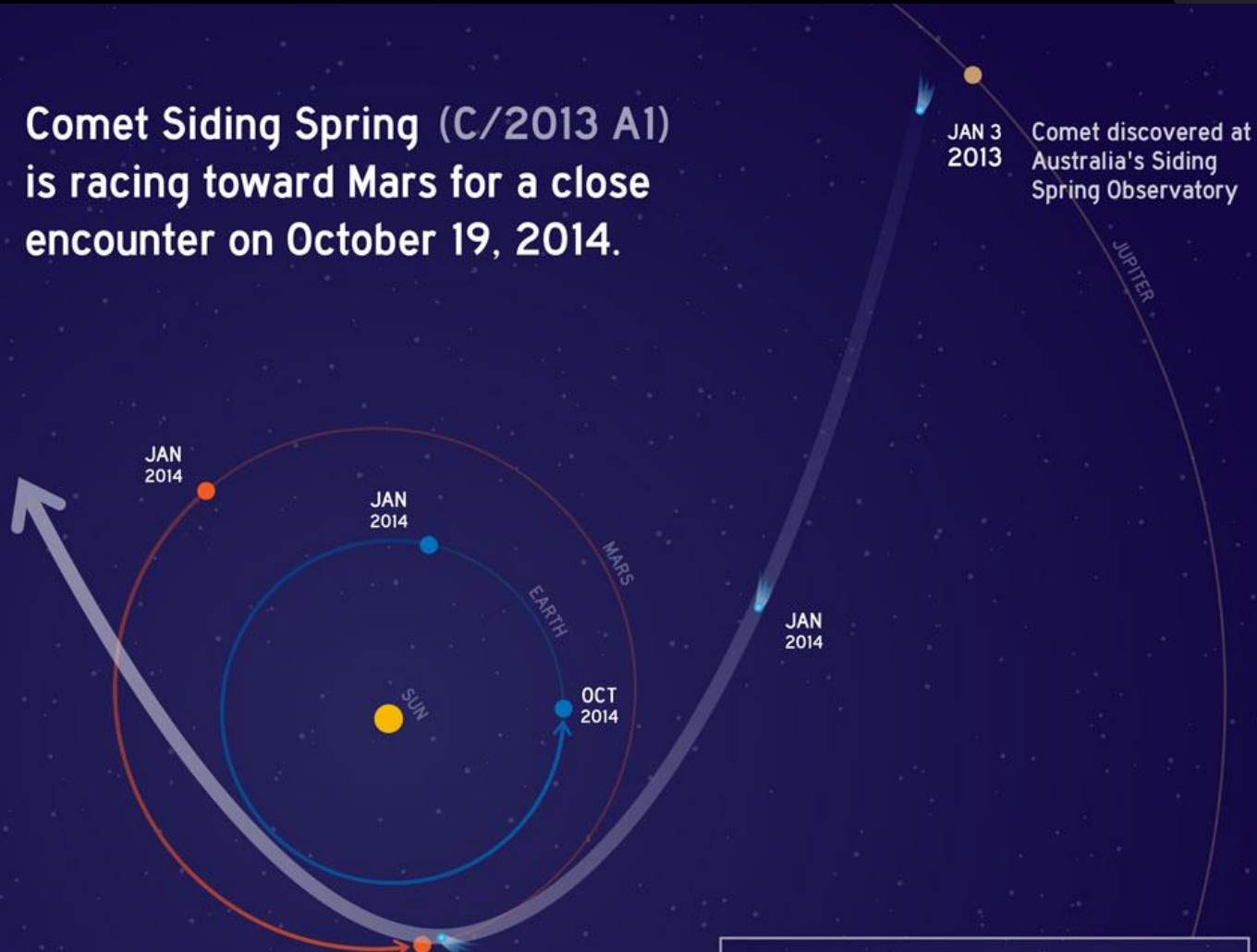
# Basics

- ◎ Comet C/2013 A1 Siding Spring will approach very close to Mars on October 19/20 2014.
- ◎ How close? 138,000km!
- ◎ Closer than any comet is known to have come to Earth.

# About the Rendezvous

- ◎ NASA is taking precautions to move spacecraft orbiting Mars out of harms way.
- ◎ It is not known what the impact on the comet will be, or hence if there would be a definite risk to spacecraft orbiting Mars.
- ◎ Now until 19<sup>th</sup> October is important for observing the comet to characterise it's behaviour and improve predictions.

# Comet Siding Spring (C/2013 A1) is racing toward Mars for a close encounter on October 19, 2014.



JAN 3 2013

Comet discovered at Australia's Siding Spring Observatory

JUPITER

JAN 2014

JAN 2014

EARTH

OCT 2014

SUN

MARS

JAN 2014

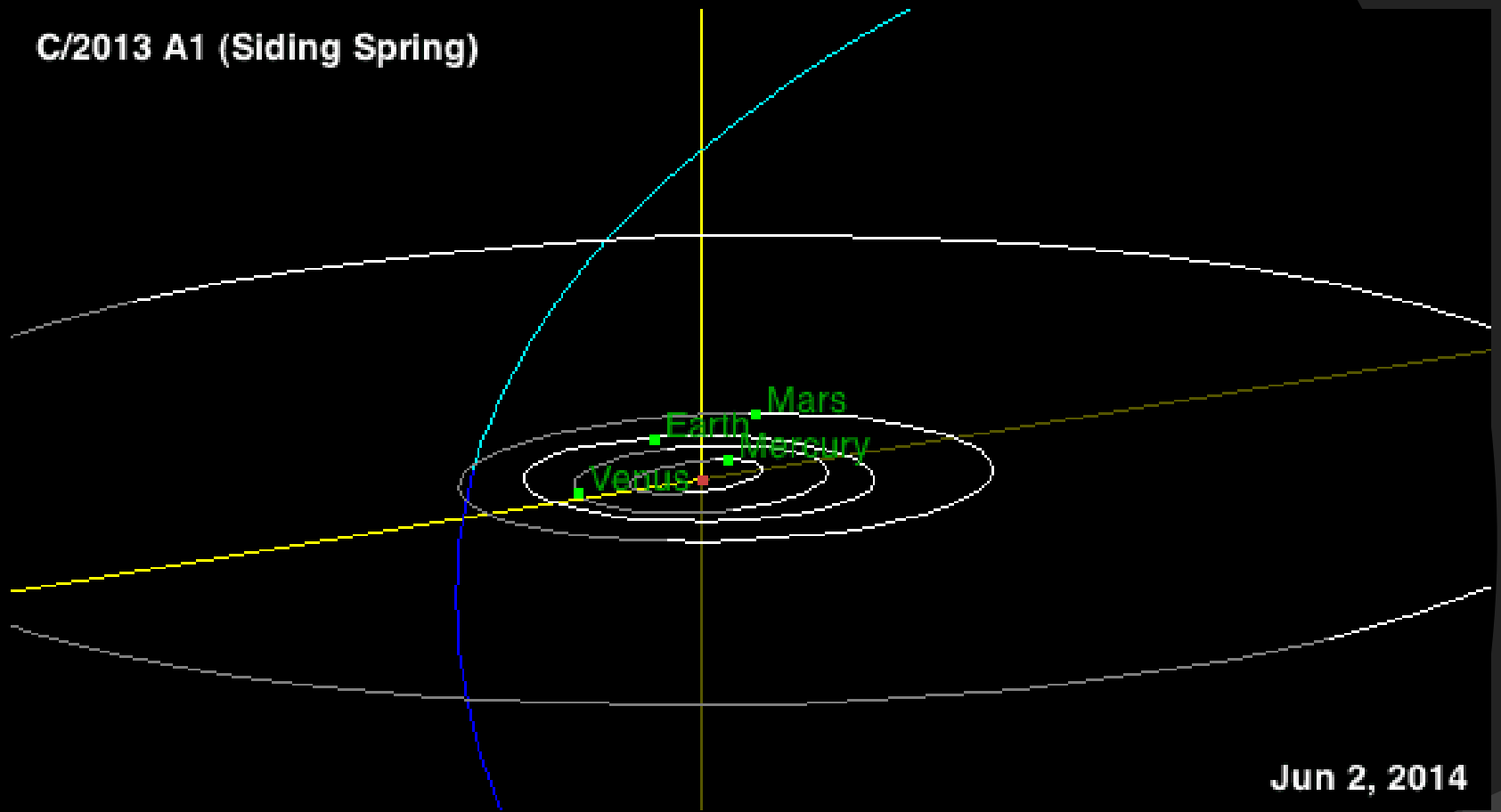
Closest approach to Mars: **OCT 19 2014**  
~82,000 miles (132,000 km)

- Updated as of July 10, 2014.
- Planetary orbits drawn to scale; object icons not to scale.



OCT 2014  
Oblique View

C/2013 A1 (Siding Spring)



Jun 2, 2014

# What does the comet look like?

Comet C/2013 A1 (Siding Spring) 2014-07-31T20:56:23.809 UT; 12" SCT @ -2200mm 0.84"/pixel, ST8-XME @ Bin 1x1, Astrodon Type II R filter, 8 x 300 second exposures, sum combined.



# What does the comet look like?

Comet C/2013 A1 (Siding Spring) 2014-08-01T20:51:03.970 UT: 12" SCT @ ~2200mm 0.84"/pixel, ST9-ME @ Bin 1x1, Astrodon Type II R filter, 8 x 300 second exposures, sum combined.





# What does the comet look like?

Comet C/2013 A1 (Siding Spring); 2014-08-03 20:02:12ZUTC; 12" SCT @ ~2200mm, 0.84"/pixel, ST8-XME @ -25bin 1x1, 10x300 second exposures summed.





# What does the comet look like?

Comet C/2013 A1 (Siding Spring) 2014-08-15 16:11UT; Perth, Western Australia; 10 x 300s exposures summed. 0.84"/pixel



Object: Comet C/2013 A1 (Siding Spring)  
Date of Observation UT: 2014-08-15  
Time of Observation UT: 16:11  
Observer Name: Roger Groom  
Location of Observation: Perth, Western Australia (-31°54'S, 116°09'E)  
Camera: SBIG ST8-XME (bin 1x1)  
Filter: Red Astronomik Type II (not Type IIc)  
Exposure Time: 10 x 300 sec  
Plate Scale: 0.84 arc sec/pixel  
Position Angle: 0 degrees 26 minutes from North  
Axes: North-up, East-left

www.RogerGroom.com © Roger Groom

# What does the comet look like?

Comet C/2013 A1 (Siding Spring) 2014-08-13T16:20UT; Perth, Western Australia; 42 x 300s exposures summed. 0.84"/pixel



Object: Comet C/2013 A1 (Siding Spring)  
Date of Observation UT: 2014-08-15  
Time of Observation UT: 16:11  
Observer Name: Roger Groom  
Location of Observation: Perth, Western Australia (-31o54'S, 116o09'E)  
Camera: SBIG ST8-XME (bin 1x1)  
Filter: Red Astronomik Type II (not Type IIc)  
Exposure Time: 10 x 300 sec (median stacked)  
Plate Scale: 0.84 arc sec/pixel  
Position Angle: 0 degrees 26 minutes from North  
Axes: North-up, East-left

www.RogerGroom.com © Roger Groom

# More photo's...

◎ [www.RogerGroom.com](http://www.RogerGroom.com)

◎ Specifically:

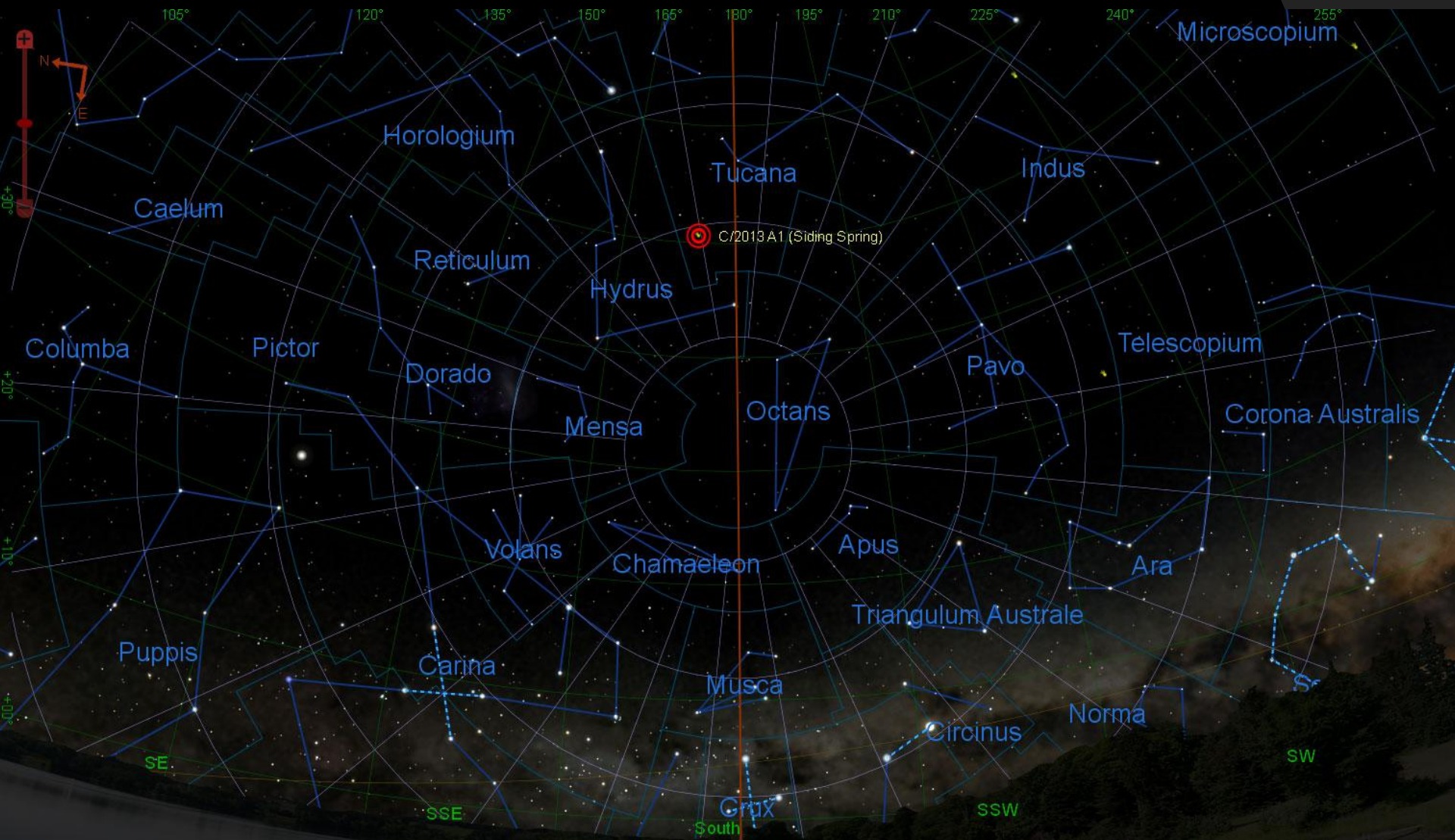
- <http://rogergroom.com/astro-photography/comet-photography/photographs-of-comet-c2013-a1-siding-spring/>

# Public Interest

- ◎ The media is likely to pick up on this in a big way.
- ◎ It will brighten to about magnitude 8, which is still fainter than naked eye visible.
- ◎ It is a great opportunity for amateurs to observe a comet and watch whatever interesting developments occur.

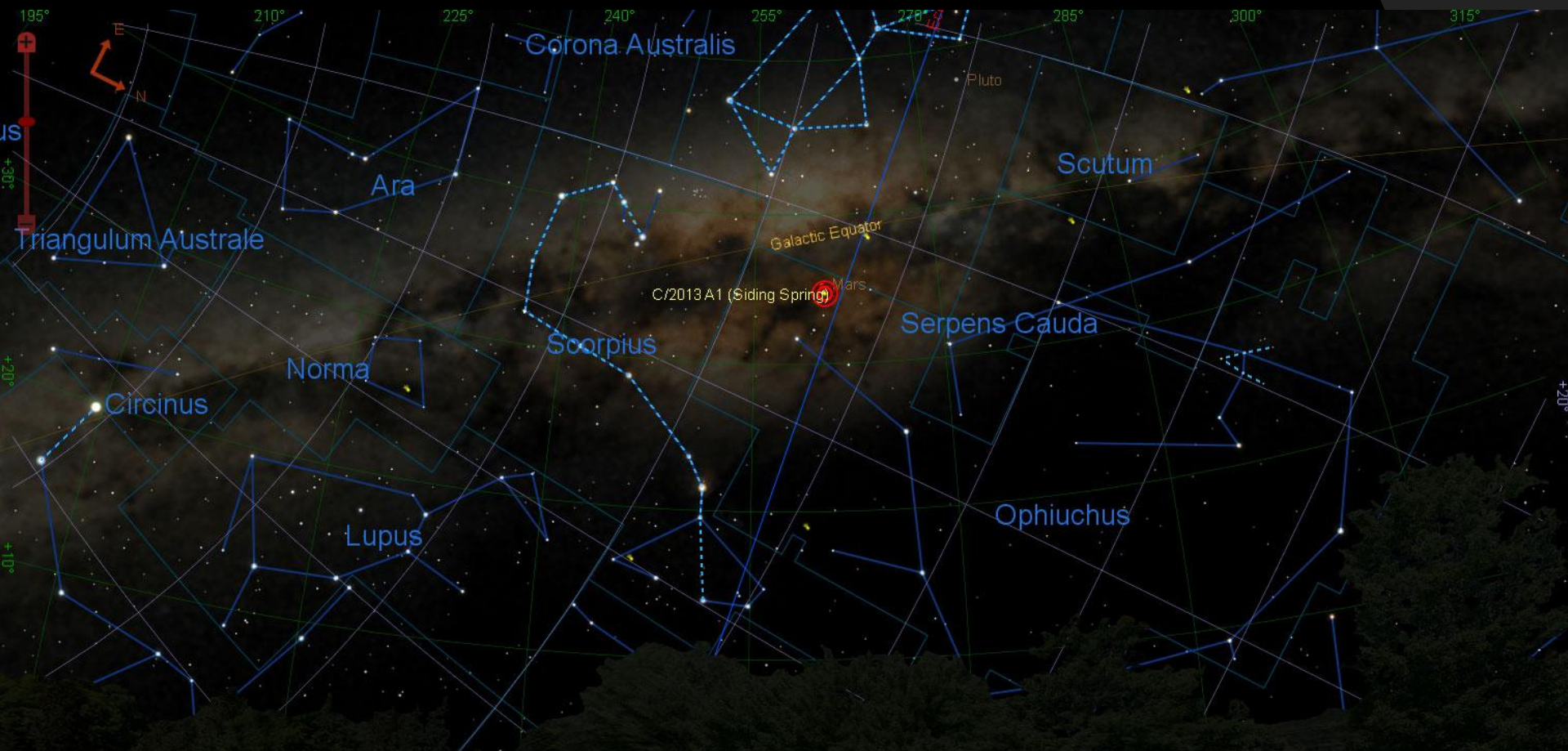


# Where in the sky is it?





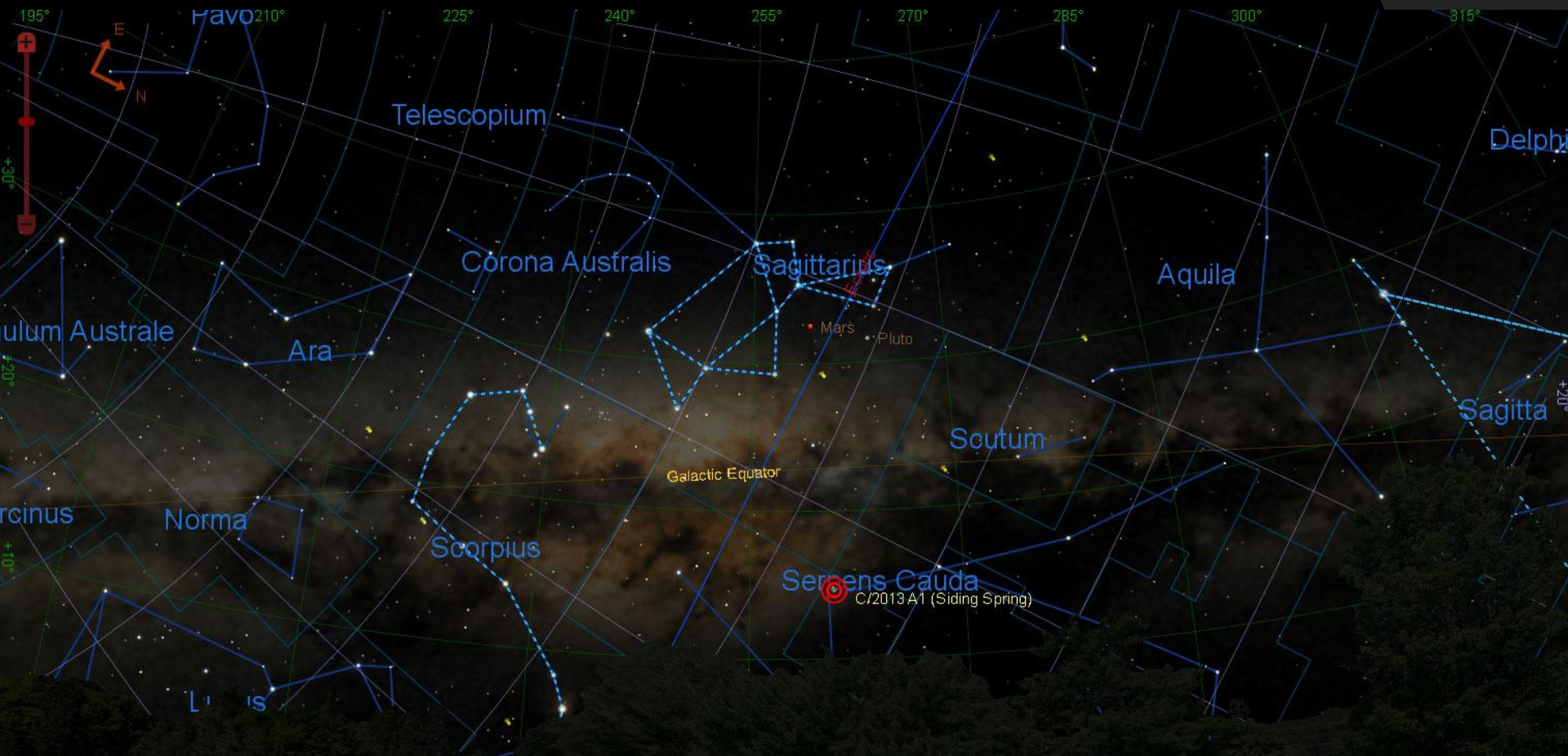
# Where in the sky is it?



SW WSW West WNW



# Where in the sky is it?



SW WSW West WNW



# Notable Events

- ◎ August 29<sup>th</sup> & 30<sup>th</sup> LMC & 47 Tucanae
  - Best viewed @ 3am!
- ◎ September
  - Brightens gradually and moves more north-west, moving from circumpolar in the south to a more western sky object.
- ◎ October 19<sup>th</sup> – 20<sup>th</sup>
  - Closest Mars approach
  - It will be visible in the western sky after sunset.
- ◎ November
  - Sets earlier and earlier in the western sky until viewing will become difficult.

# More photo's...

◎ [www.RogerGroom.com](http://www.RogerGroom.com)

◎ Specifically:

- <http://rogergroom.com/astro-photography/comet-photography/photographs-of-comet-c2013-a1-siding-spring/>