

Sunspot Formation February – March, 2015

Herewith a list with possible sunspot combinations... Only the big Line Ups are important.

At the moment I can calculate if a sunspot will have X flare potential, will be medium strong or weak. For instance I can explain why sunspot 2209 was the largest sunspot in decades, but didn't produce a CME (it didn't have a Triple longer than the Mercury – Venus opposition!)

However, a huge amount needs still to be done. I am looking for help to 'crack' everything:

Problems remaining:

- 1) Where will the sunspots appear?
- 2) When will they stop growing? When will they grow again?
- 3) When will they flare?
- 4) When will they flare again?
- 5) What is the interaction with the other sunspots?
- 6) Etcetera...

Sunspot Formation February 2015

Best sunspot site:

<http://www.solen.info/solar/>

On the backside (this is plus minus 2 days!)

<http://www.solarham.net/farside.htm>

January 16 (15:00) – 31 (18:00), 2015: Triple Line Up Juno – Ceres - Pluto

February 1 (04:30)

January 31 (11:00) - February 1 (04:30), 2015: Conjunction Mercury – Jupiter

February 1 (10:00)

January 26 (00:30) – February 1 (10:00), 2015: Triple Line Up Saturn – Pallas – Mercury

February 1???

**January 30 (15:30) - February 1 (15:30), 2015: Conjunction Venus - Mars and the Sun
UNUSED**

**January 31 (03:30) - February 3 (07:30), 2015: Triple Line Up Venus – Neptune - Earth
Unused**

Sunspot 2280 / February 2 / Southern Hemisphere

February 2 (17:00)

January 29 (13:30) - February 2 (17:00), 2015: Triple Line Up Mercury - Juno - Earth

February 2 (20:00)

January 27 (03:00) – February 2 (20:00), 2015: Triple Line Up Venus – Jupiter – Juno

**Sunspot 2281 (rotated into view February 3) / January 31 – February 2 / Farside /
Northern Hemisphere**

February 3 (07:30)

January 29 (09:30)- February 3 (07:30), 2015: Triple Line Up Mars - Chiron - Earth

February 3 (07:30)

January 31 (03:30) - February 3 (07:30), 2015: Triple Line Up Venus – Neptune - Earth

**February 4 (07:30) – 6 (19:00), 2015: Conjunction Venus – Uranus and the Sun
Unused?**

February 4 (08:30)

February 4 (06:30) – 6 (14:30), 2015: Triple Line Up Mercury - Vesta - Earth

February 4 (08:30) – 5 (05:00), 2015: Opposition Mercury – Neptune across the Sun

February 4 (06:30) – 6 (14:30), 2015: Triple Line Up Mercury - Vesta - Earth????

February 5 (00:15) – 8 (12:30), 2015: Conjunction Earth – Jupiter and the Sun

February 5 (05:00)

February 4 (08:30) – 5 (05:00), 2015: Opposition Mercury – Neptune across the Sun

?

February 4 (07:30) – 6 (19:00), 2015: Conjunction Venus – Uranus and the Sun

February 5 (09:30)- 6 (20:00), 2015: Triple Line Up Mercury – Venus – Mars

February 6 (11:30)

**Growth potential and M flare reactions possible... 2 Triples (?) in opposition ending and
one Triple lasting a bit longer than opposition**

February 4 (06:30) – 6 (14:30), 2015: Triple Line Up Mercury - Vesta - Earth????
February 5 (09:30) - 6 (20:00), 2015: Triple Line Up Mercury – Venus – Mars
February 5 (20:30) - 9 (04:00), 2015: Triple Line Up Mercury - Vesta - Juno
February 5 (09:30) - 6 (20:00), 2015: Triple Line Up Mercury – Venus – Mars
February 6 (11:30) – 7 (09:30) , 2015: Opposition Mercury – Chiron across the Sun
February 5 (00:15) – 8 (12:30), 2015: Conjunction Earth – Jupiter and the Sun??????

Mercury
Venus
Mars
Earth
Vesta
Chiron
Juno

Sunspot 2282 (rotated into view February 7) / January 25 – 27 / Farside / Northern Hemisphere

February 7 (09:30)
February 6 (11:30) – 7 (09:30) , 2015: Opposition Mercury – Chiron across the Sun

February 7 (15:30) - 10 (18:30), 2015: Triple Line Up Chiron - Venus - Earth
Unused

February 8 (00:30) – 13 (10:00), 2015: Triple Line Up Juno - Vesta - Earth (check!)
UNUSED

February 8 (07:00) - 17 (10:30), 2015: Triple Line Up Pluto – Venus – Vesta
UNUSED

February 8 (12:30)
February 5 (00:15) – 8 (12:30), 2015: Conjunction Earth – Jupiter and the Sun

February 9 (04:00)
February 5 (20:30) - 9 (04:00), 2015: Triple Line Up Mercury - Vesta - Juno

February 10 (07:30)- 20 (20:30), 2015: Triple Line Up Pluto – Ceres – Earth
Unused

February 10 (18:30)
February 7 (15:30) - 10 (18:30), 2015: Triple Line Up Chiron - Venus - Earth

February 10 (11:30)
February 6 (01:00) – 15 (23:30), 2015: Triple Line Up Juno – Mars – Neptune

February 9 (10:30) – 11 (02:30), 2015: Triple Line Up Mercury –Venus - Uranus
February 10 (11:30) – 16 (16:30), 2015: Conjunction Mars – Uranus and the Sun

February 11 (02:30)

February 9 (10:30) – 11 (02:30), 2015: Triple Line Up Mercury –Venus - Uranus

Sunspot 2283 / February 12 / Northern Hemisphere
Unremarkable

Sunspot 2284 / February 12 / Northern Hemisphere
Unremarkable

Sunspot 2288 / February 12 / Southern Hemisphere
Unremarkable

February 13 (10:00)

February 8 (00:30) – 13 (10:00), 2015: Triple Line Up Juno - Vesta - Earth

February 13 (16:30)

Remark: See sunspot February 10

February 12 (11:15) - 15 (12:30), 2015: Triple Line Up Mercury – Mars - Uranus

February 13 (16:30)- 14 (19:30), 2015: Opposition Mercury – Uranus across the Sun

February 13 (17:00) - 15 (01:30), 2015: Opposition Mercury - Mars across the Sun

Sunspot 2285 / February 14 / Southern Hemisphere
Unremarkable

February 14 (19:30)

February 13 (16:30)- 14 (19:30), 2015: Opposition Mercury – Uranus across the Sun

February 15 (01:30)

February 13 (17:00) - 15 (01:30), 2015: Opposition Mercury - Mars across the Sun

February 15 (12:30)

February 12 (11:15) - 15 (12:30), 2015: Triple Line Up Mercury – Mars - Uranus

February 15 (23:30)

February 6 (01:00) – 15 (23:30), 2015: Triple Line Up Juno – Mars - Neptune

February 16 (16:30)

February 10 (11:30) – 16 (16:30), 2015: Conjunction Mars – Uranus and the Sun

February 16 (10:00) – March 5 (06:00), 2015: Conjunction Saturn – Pallas and the Sun

Sunspot 2289 (rotated into view February 17) / = old 2279? / Southern Hemisphere

Sunspot 2287 / February 17 / Northern Hemisphere

February 17 (10:30)

February 8 (07:00) - 17 (10:30), 2015: Triple Line Up Pluto – Venus – Vesta

Sunspot 2290 / February 16 - 18 or old 2271? / Farside / Northern Hemisphere

Sunspot 2286 / February 18 / Southern Hemisphere

Unremarkable

February 20 (20:30)

February 10 (07:30)- 20 (20:30), 2015: Triple Line Up Pluto – Ceres – Earth

February 21 (05:00)

Strong sunspot!

Strong growth potential and strong flare reactions possible. 2 Triples in opposition ending + Triple lasting longer than opposition...

February 16 (10:30) – 25 (04:30), 2015: Triple Line Up Mercury – Jupiter – Vesta

February 17 (15:30) – 22 (01:00), 2015: Triple Line Up Mercury - Juno - Earth

February 20 (16:30) – 23 (19:00), 2015: Triple Line Up Venus - Mars - Earth

February 21 (05:00) – 24 (02:30), 2015: Opposition Mercury – Venus across the Sun

Mercury

Venus

Jupiter

Mars

Earth

Juno

Vesta

Sunspot 2291 / February 21 / Northern Hemisphere

Unremarkable

February 22 (01:00)

February 17 (15:30) – 22 (01:00), 2015: Triple Line Up Mercury - Juno - Earth

February 23 (19:00)

February 20 (16:30) – 23 (19:00), 2015: Triple Line Up Venus - Mars - Earth

February 23 (20:30) – March 2 (6:00), 2015: Triple Line Up Jupiter - Vesta – Earth

Unused

February 24 (02:30)

February 21 (05:00) – 24 (02:30), 2015: Opposition Mercury – Venus across the Sun

February 24 (05:00) – 28 (05:00), 2015: Opposition Earth – Neptune across the Sun

February 24 (18:30) – March 9 (15:00), 2015: Triple Line Up Venus – Neptune – Juno

February 25 (04:30)

February 16 (10:30) – 25 (04:30), 2015: Triple Line Up Mercury – Jupiter – Vesta

February 25 (00:30)

Large M flare potential

February 16 (10:00) – March 5 (06:00), 2015: Conjunction Saturn – Pallas and the Sun

February 25 (00:30) – March 9 (11:00), 2015: Triple Line Up Saturn – Pallas – Mercury

February 26 (04:30) – March 5 (12:00), 2015: Triple Line Up Saturn – Pallas – Venus

February 27 (11:30) – 28 (20:30), 2015: Conjunction Mercury – Saturn and the Sun

February 27 (18:30) – 28 (23:30), 2015: Conjunction Mercury – Pallas and the Sun

February 28 (20:30)

February 27 (11:30) – 28 (20:30), 2015: Conjunction Mercury – Saturn and the Sun

February 28?

February 24 (05:00) – 28 (05:00), 2015: Opposition Earth – Neptune across the Sun

February 24 (18:30) – March 9 (15:00), 2015: Triple Line Up Venus – Neptune – Juno

February 28 (07:30)

M flare potential

February 27 (18:30) – 28 (23:30), 2015: Conjunction Mercury – Pallas and the Sun

February 28 (07:30) – March 3 (09:00), 2015: Triple Line Up Jupiter - Mercury - Earth

February 28 (20:00) – March 11 (01:30), 2015: Triple Line Up Juno – Mars – Chiron

Unused

February 28 (23:30)

February 27 (18:30) – 28 (23:30), 2015: Conjunction Mercury – Pallas and the Sun

February 27 (18:30) – 28 (23:30), 2015: Conjunction Mercury – Pallas and the Sun

March 1 (06:00)

February 16 (10:00) – March 5 (06:00), 2015: Conjunction Saturn – Pallas and the Sun

March 1 (06:00) – 2 (02:00), 2015: Triple Line Up Mercury – Venus – Saturn

Mercury

Venus

Saturn

Pallas

March 1 (merger March 1?)

February 16 (10:00) – March 5 (06:00), 2015: Conjunction Saturn – Pallas and the Sun

March 1 (10:00) – 3 (02:00), 2015: Triple Line Up Mercury - Venus – Pallas

Mercury

Venus
Saturn
Pallas

March 2 (merger March 1?)

March 1 (06:00) – 2 (02:00), 2015: Triple Line Up Mercury – Venus - Saturn

February 16 (10:00) – March 5 (06:00), 2015: Conjunction Saturn – Pallas and the Sun

Mercury

Venus

Saturn

Pallas

March 2

February 24 (18:30) – March 9 (15:00), 2015: Triple Line Up Venus – Neptune – Juno?

February 28 (20:00) – March 11 (01:30), 2015: Triple Line Up Juno – Mars – Chiron

March 2 (01:00) – 13 (19:00), 2015: Conjunction Jupiter - Juno and the Sun

Venus

Neptune

Mars

Jupiter

Juno

Chiron

March 2 (12:30) – 5 (22:30), 2015: Triple Line Up Vesta - Mercury - Earth

UNUSED

March 3 (02:00), (merger March 1?)

February 16 (10:00) – March 5 (06:00), 2015: Conjunction Saturn – Pallas and the Sun

March 1 (10:00) – 3 (02:00), 2015: Triple Line Up Mercury - Venus – Pallas

Mercury

Venus

Saturn

Pallas

March 3 (09:00)

February 28 (07:30) – March 3 (09:00), 2015: Triple Line Up Jupiter - Mercury - Earth

March 3 (12:00)

March 3 (04:00) – 6 (09:00), 2015: Triple Line Up Uranus – Venus – Earth

March 3 (12:00) – 5 (23:30), 2015: Opposition Saturn – Venus across the Sun

March 4 (06:30) – 7 (03:00), 2015: Opposition Pallas – Venus across the Sun?

March 5 (06:00)

February 16 (10:00) – March 5 (06:00), 2015: Conjunction Saturn – Pallas and the Sun

March 5 (12:00)

February 26 (04:30) – March 5 (12:00), 2015: Triple Line Up Saturn – Pallas – Venus

March 5 (22:30)

March 2 (12:30) – 5 (22:30), 2015: Triple Line Up Vesta - Mercury - Earth

March 5 (23:30)

March 3 (12:00) – 5 (23:30), 2015: Opposition Saturn – Venus across the Sun

March 6 (09:00)

March 4 (06:30) – 7 (03:00), 2015: Opposition Pallas – Venus across the Sun

March 3 (04:00) – 6 (09:00), 2015: Triple Line Up Uranus – Venus – Earth

March 6 (06:00) – 10 (04:00), 2015: Opposition Earth – Chiron across the Sun

March 7 (03:00)

March 4 (06:30) – 7 (03:00), 2015: Opposition Pallas – Venus across the Sun

March 8 (04:00)

March 2 (01:00) – 13 (19:00), 2015: Conjunction Jupiter - Juno and the Sun

March 8 (04:00) - 17 (08:30), 2015: Triple Line Up Vesta – Mercury – Jupiter

March 9 (15:30)

March 2 (01:00) – 13 (19:00), 2015: Conjunction Jupiter - Juno and the Sun

March 9 (15:30) – April 4 (19:00), 2015: Triple Line Up Mars – Jupiter – Neptune

March 9 (11:00)

February 25 (00:30) – March 9 (11:00), 2015: Triple Line Up Saturn – Pallas – Mercury

March 9 (15:00)

February 24 (18:30) – March 9 (15:00), 2015: Triple Line Up Venus – Neptune – Juno

March 2 (01:00) – 13 (19:00), 2015: Conjunction Jupiter - Juno and the Sun

Venus

Neptune

Jupiter

Juno

March 9 (03:00)

March 6 (06:00) – 10 (04:00), 2015: Opposition Earth – Chiron across the Sun

March 9 (03:00) – 14 (05:00), 2015: Triple Line Up Mars – Uranus – Earth

March 10 (04:00)

March 6 (06:00) – 10 (04:00), 2015: Opposition Earth – Chiron across the Sun

March 11 (01:30)

February 28 (20:00) – March 11 (01:30), 2015: Triple Line Up Juno – Mars – Chiron

March 2 (01:00) – 13 (19:00), 2015: Conjunction Jupiter - Juno and the Sun

Jupiter

Mars

Juno

Chiron

March 13 (00:30)

March 6 (19:30) – 29 (06:00), 2015: Triple Line Up Vesta – Ceres - Saturn

March 13 (00:30) – 14 (06:30), 2015: Conjunction Mercury – Ceres and the Sun

Mercury

Saturn

Vesta

Ceres

March 13 (19:00)

March 2 (01:00) – 13 (19:00), 2015: Conjunction Jupiter - Juno and the Sun

March 14 (05:00)

March 9 (03:00) – 14 (05:00), 2015: Triple Line Up Mars – Uranus - Earth

March 14 (06:30)

March 13 (00:30) – 14 (06:30), 2015: Conjunction Mercury – Ceres and the Sun

March 15 (12:00)

March 14 (05:30) - 18 (10:30), 2015: Triple Line Up Vesta – Mercury – Juno

March 15 (12:00) – 16 (20:30), 2015: Conjunction Mercury - Pluto and the Sun

March 16 (20:30)

March 15 (12:00) – 16 (20:30), 2015: Conjunction Mercury - Pluto and the Sun

March 17 (08:30)

March 8 (04:00) - 17 (08:30), 2015: Triple Line Up Vesta – Mercury – Jupiter

March 17 (02:30) – 19 (14:00), 2015: Triple Line Up Mercury – Neptune - Earth

UNUSED

March 17 (12:30) – 22 (17:00), 2015: Triple Line Up Mercury – Jupiter – Juno

UNUSED

March 18 (10:30)

March 14 (05:30)- 18 (10:30), 2015: Triple Line Up Vesta – Mercury – Juno

**March 18 (17:00) – 20 (10:00), 2015: Triple Line Up Mercury - Venus – Ceres
UNUSED**

March 19 (14:00)

March 17 (02:30) – 19 (14:00), 2015: Triple Line Up Mercury – Neptune - Earth

March 20 (10:00)

March 18 (17:00) – 20 (10:00), 2015: Triple Line Up Mercury - Venus – Ceres

March 22 (17:00)

March 17 (12:30) – 22 (17:00), 2015: Triple Line Up Mercury – Jupiter - Juno

**March 22 (18:00) – 24 (15:00), 2015: Triple Line Up Mercury - Venus – Pluto
UNUSED**

March 24 (15:00)

March 22 (18:00) – 24 (15:00), 2015: Triple Line Up Mercury - Venus – Pluto

March 25 (00:30)

**Growth potential and X flare reactions possible. Triple in conjunction ending + 2 Triples
lasting longer then conjunction...**

March 21 (06:00) – April 5 (23:00), 2015: Triple Line Up Mercury – Mars – Pallas

March 24 (20:00)– April 9 (02:00), 2015: Triple Line Up Mercury – Mars - Saturn

March 23 (10:00) – 25 (16:00), 2015: Triple Line Up Mercury – Chiron - Earth

March 23 (10:00) – 25 (16:00), 2015: Triple Line Up Mercury – Chiron - Earth

**March 25 (00:30) – 26 (01:30), 2015: Conjunction Mercury - Vesta and the Sun
Mercury**

Saturn

Mars

Earth

Chiron

Vesta

Pallas

March 26 (01:30)

March 25 (00:30) – 26 (01:30), 2015: Conjunction Mercury - Vesta and the Sun

**March 26 (14:00) – April 6 (14:30), 2015: Triple Line Up Mars – Saturn – Pallas
UNUSED**

March 27 (08:30)

March 18 (18:00) – 30 (00:30), 2015: Triple Line Up Vesta – Jupiter - Juno

March 27 (09:20) – April 5 (07:30), 2015: Triple Line Up Mercury – Saturn – Pallas?

March 27 (08:55) - 28 (12:00), 2015: Opposition Mercury – Jupiter across the Sun

Jupiter

Mercury

Juno

Vesta

Saturn?

Pallas?

March 28 (12:00)

March 27 (08:30) - 28 (12:00), 2015: Opposition Mercury – Jupiter across the Sun

March 28 (07:30) – 31 (01:00), 2015: Opposition Ceres – Venus across the Sun

March 28

March 27 (09:30) – April 5 (07:30), 2015: Triple Line Up Mercury – Saturn – Pallas?

March 28 (09:30) – April 13 (03:00), 2015: Triple Line Up Pluto – Pallas – Juno

March 28 (10:00) - 29 (13:00), 2015: Opposition Mercury – Juno across the Sun

March 28 (19:00)

March 28 (07:30) – 31 (01:00), 2015: Opposition Ceres – Venus across the Sun

March 28 (19:00) – April 16 (19:00), 2015: Triple Line Up Neptune – Pallas – Ceres

March 29 (06:00)

March 6 (19:30) – 29 (06:00), 2015: Triple Line Up Vesta – Ceres - Saturn

March 28 (07:30) – 31 (01:00), 2015: Opposition Ceres – Venus across the Sun

March 29 (13:00)

March 28 (10:00) -29 (13:00), 2015: Opposition Mercury – Juno across the Sun

March 29 (17:00)

March 28 (07:30) – 31 (01:00), 2015: Opposition Ceres – Venus across the Sun

March 29 (17:00) – April 5 (01:00), 2015: Triple Line Up Venus – Mars - Uranus

March 30 (00:30)

March 18 (18:00) – 30 (00:30), 2015: Triple Line Up Vesta – Jupiter - Juno

March 31 (01:00)

March 28 (07:30) – 31 (01:00), 2015: Opposition Ceres – Venus across the Sun

March 31 (02:00)

March 27 (03:00) – April 6 (17:30), 2015: Triple Line Up Pluto – Vesta – Mars

March 31 (02:00) - April 2 (13:00), 2015: Opposition Pluto – Venus across the Sun

**March 31 (14:00) - April 1 (14:00), 2015: Conjunction Mercury - Neptune and the Sun
Unused**