Version 2 - 2012 Apr 02

What changed form v1:

- Added work-around for bug in the www.eclipse-chasers.com eclipse calculator
- Updated chances of viewing the eclipse at various sites with improved weather model
- Added general cloud cover map
- Added airport codes and airnav.com URLs for airports
- Added Lat, Long, Elevation, and timezone info for airports
- Added more airports along the path
- Added a few remarks about issues of weather or eclipse duration for certain airports

Hello,

I want to encourage you to plan to see the Annual Eclipse of the Sun. In this eclipse will appear too small in the sky to cover the Sun (too far from Earth for the Moon's shadow to touch the surface of the Earth).

Here the Sun and Moon are show here above the Earth's surface. The left side shows the classical total eclipse configuration, the right side shows the annular eclipse configuration:

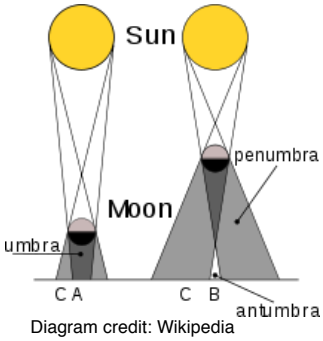


Diagram credit: Wikipedia

The effect for those who travel to near the "centerline" (called the Antumbra line) is to see the Sun as a ring in the sky:


Image credit: stargazing.net

The above image was taken in 2002, the last time the US mainland saw an annular eclipse.

Here is a nice web page showing images from the Annular Eclipse over Spain, 2005 Oct 3:

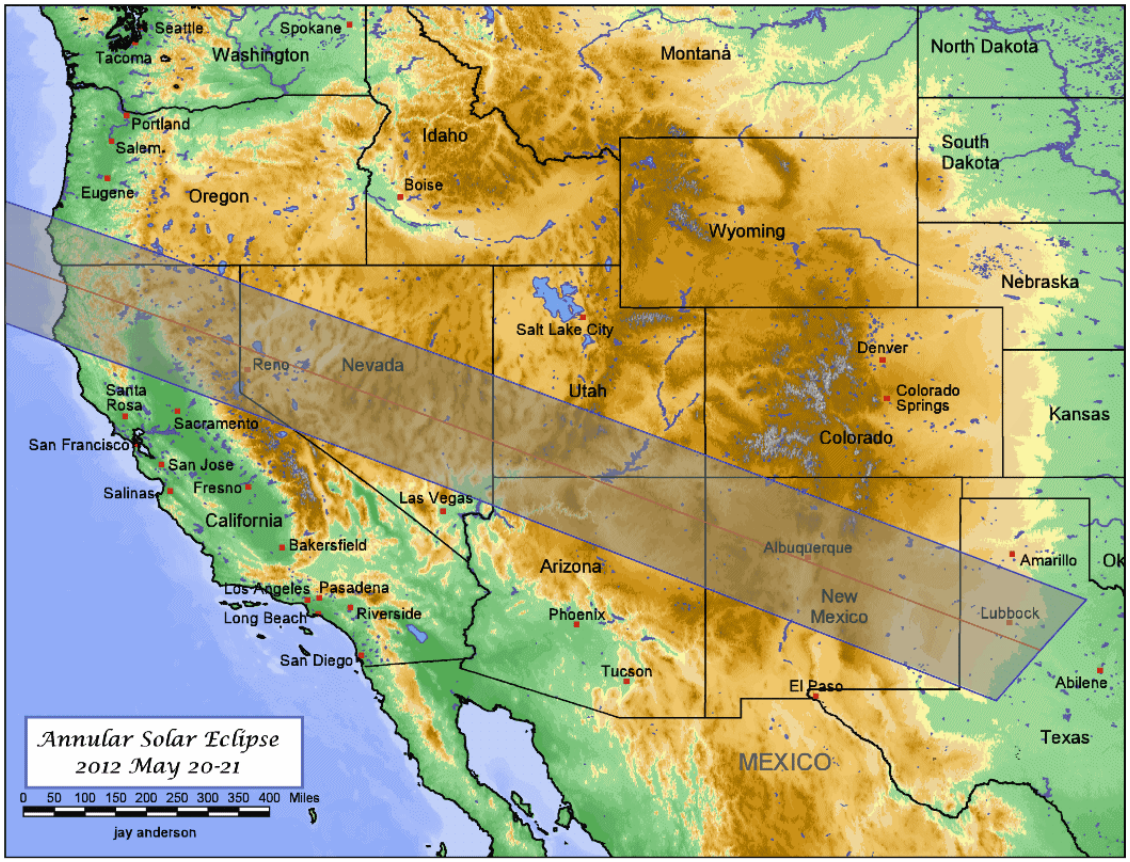
http://www.racingshadow.com/SEclipse/2005Oct3/2005Oct3Report.html

Unlike a total eclipse, where during totality the moon completely covers the Sun, your eyes must be protected when you look at the Sun. I highly recommend obtaining eclipse glasses from a reputable source such as rainbowsymphony.com. For example:

> http://www.rainbowsymphony.com/eclipse/exgen.html
> http://www.rainbowsymphony.com/eclipse/solrvwrhh.html

I recommend having at least one eclipse glasses for everyone in your party, plus a few extra for others who may be nearby and came unprepared.

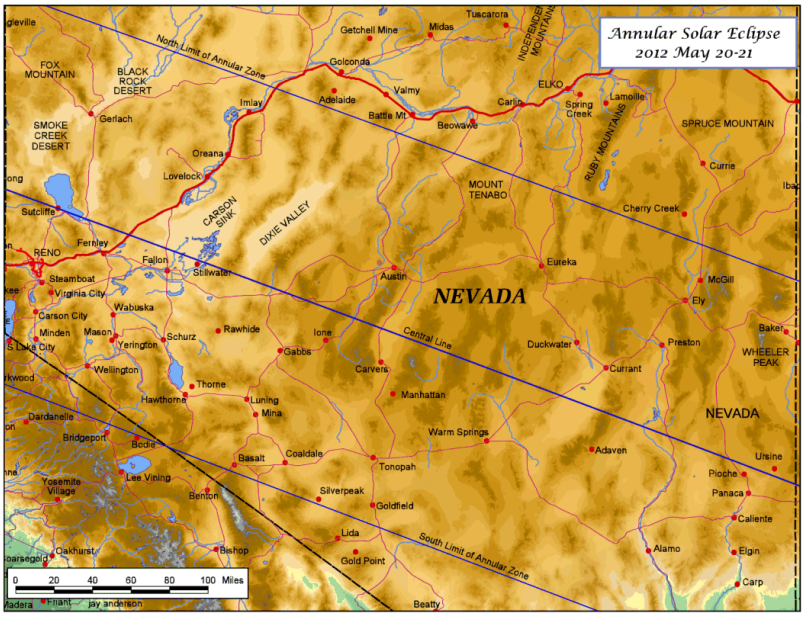
This map shows the "path of the ring":

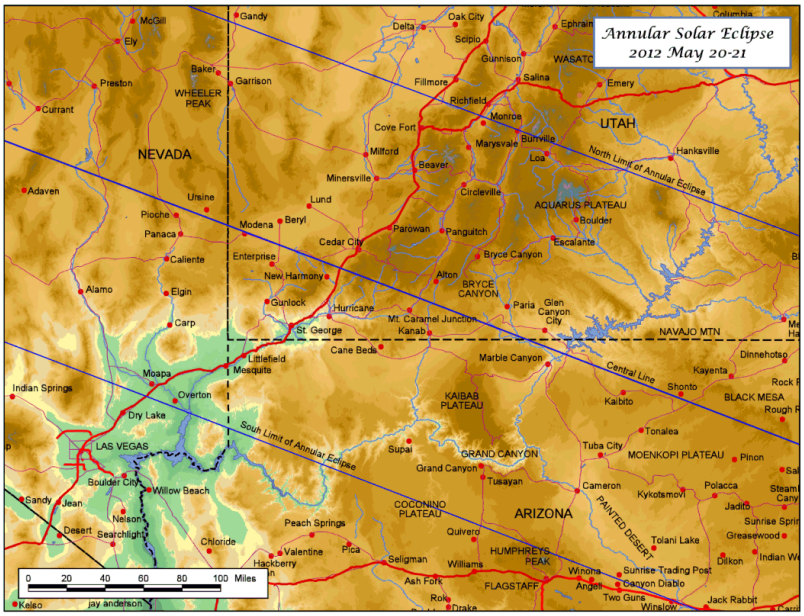


For the West Coast the eclipse date will be in Sunday 2012 May 20, in the late afternoon.

It is best to be close (within say 32km/20 miles) to the central line of the eclipse for the best visual effect:


Annular Solar Eclipse
2012 May 20-21
North Limit of Annular Zone
Central Line
South Limit of Annular Zone
0 20 40 60 80 100 Miles
jay anderson

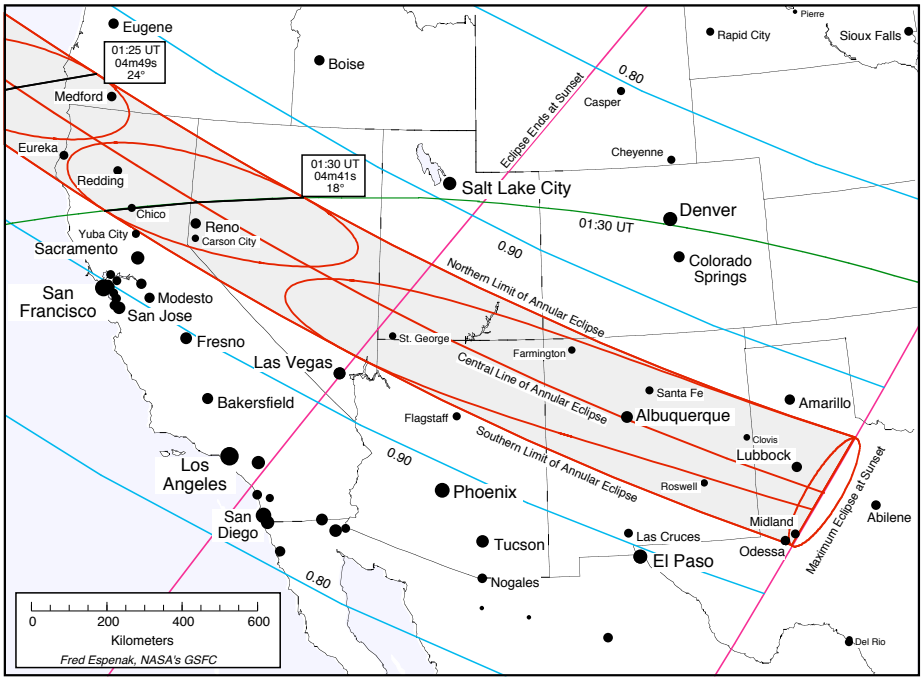

Annular Solar Eclipse
2012 May 20-21
NEVADA
NEVADA
North Limit of Annular Zone
Central Line
South Limit of Annular Zone
0 20 40 60 80 100 Miles
jay anderson



The time of the eclipse will vary depending on where you are along the path. For the US, the eclipse will be late in the afternoon of 2012 May 20:

FIGURE 2

Annular Solar Eclipse of 2012 May 20



Here is a site where you may determine more accurate timings:

http://www.eclipse-chasers.com/tseCalculator.php?TSE=ase2012d

IMPORTANT NOTE: Click on the above link
Then click on the [Do advanced Calculation]

Then scroll down and enter in the following data:

Latitude ((enter latitude))
[x] Check of North

Longitude (enter longitude)
[x] Check if West

Elevation: ((enter 1000 if you do not know))

UT Offset: -7 (for Pacific Timezone: CA, OR, NV),
-7 (Arizona)
-6 (New Mexico)

Locations: Calculated <== Important

Lunar profile:
(*) Kaguya/Herald

Options:
[x] Refraction

NOTE on output:

C1 is when the partial phase of the eclipse starts
C2 is when the annular eclipse starts
C3 is when the annular eclipse ends
C4 is when the partial phase of the eclipse ends

For example the timing for NV Highway 95 north of Fallon NV (39° 28′ 22″ N, 118° 46′ 44″ W - Elevation: 1207m UTC Offset: -7 hours):

http://g.co/maps/am4qk

The output is:

Duration 4m 27.2s <== how long the Sun will appear as a ring in the sky

C1: 5:16:12.5 PM <== When the moon starts to cover the Sun (partial phase start) == 17:15:53.7 PDT
C2: 6:28:41.6 PM <== When the annular phase starts == 18: 28:21.4 PDT
C3: 6:33:08.8 PM <== When the annular phase ends == 18:32:58.6 PDT
C4: 7:36:56.3 PM <== When the moon no longer covers the Sun (partial phase end) == 19:36:40.9 PDT

In other words: Partial phase starts about 5:15 PM and full annular starts about 6:28 PM and ends some 4 1/2 minutes later at about 6:33 PM. End of the partial eclipse, C4, ends about 7:30 PM.

=-=

I recommend that you pick a spot and plan to arrive there about an hour before C1. Bring some chairs, water. Sit back and enjoy the show.

The afternoon Sun will be low in the horizon. Pick a spot with a good clear view towards the west (place of sunset).

Here is a good site that discusses the weather prospects for the eclipse:

http://eclipser.ca/

For those with an airplane, you might want to take off and few the eclipse from above the clouds. The view of the lighting on the ground / lower clouds should be great.

Light levels will begin to drop, the air will start to cool after C1 (partial phase starts) and increase as you approach C2, (the time that the annular starts). Colors around you will become more crisp and distinct. If you have polarized sunglasses, take them off. Look up in the sky 90-degrees away from the Sun. Close to C2 (annular starts) the blue sky will appear darker because the light appearing to be more polarized (if you have polarized glasses on, you will miss the effect).

The annular phase is a wonderful but brief time. Don't waste too much this precious time taking lots of photos! Your eyes are the best recorder. Your mind is the best memory device. Be aware and present in the moment. Enjoy!

A few web sites for additional resources:

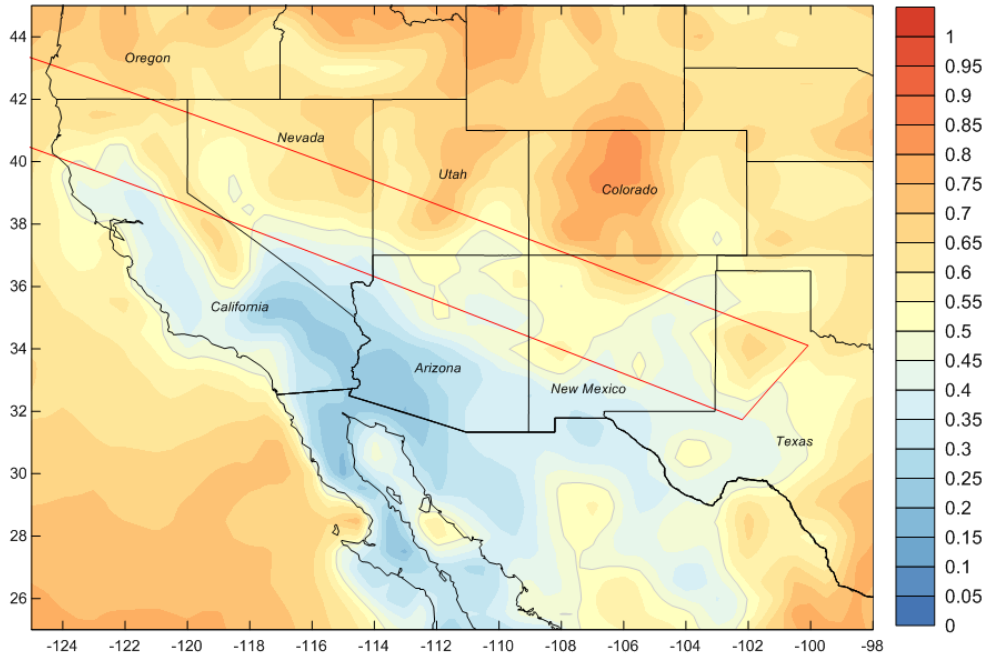
http://eclipse.gsfc.nasa.gov/OH/OH2012.html#SE2012May20A
http://en.wikipedia.org/wiki/Solar_eclipse_of_May_20,_2012
http://eclipser.ca/

=-=

I have been working on the weather modes for this 2012 May 20 eclipse. Below you will find a list of airports, near the centerline, where the weather prospects are good:

http://home.cc.umanitoba.ca/~jander/ase2012/cligraph.htm

Here is a general cloud cover map for the eclipse. The bluer (lower number), the better chance the area will be cloud free according to historic cloud observations for End of May time of year.



Of course, the weather forecast a day or two before will be a much more accurate predictor of your chance to see the eclipse cloud free than historic cloud cover models.

I expect to refine my weather models and pick my site in the next few weeks.

Here are just a FEW of airports located in the path of the eclipse. Some are better than others, weather wise.
Some are better than others, length of the eclipse wise.

Cedar City Municipal Airport, UT: (issue: moderate change of clouds)

37 42 03.4790 N / 113 05 55.8450 W
1713.6 m
-6 Hours

http://g.co/maps/dff7w
http://www.airnav.com/airport/KCDC

Partial phase starts at 6:22:22.9 PM
Annual Eclipse starts at 7:31:23.4 PM
It will be annular for 4 minutes and 17.8 seconds at 13.3 degrees above the visual horizon
Annual Eclipse ends at 7:35:41.2 PM
Partial phase ends at 8:36:56.8 PM

53% chance of viewing the eclipse without significant impact form weather

going a bit south towards the centerline is an option as well

St. George Municipal Airport, UT:

37 02 11.0000 N / 113 30 37.1000 W
879.0 m
-6 hours

http://g.co/maps/3t7a4
http://www.airnav.com/airport/KSGU

Partial phase starts at 6:23:06.7 PM
Annual Eclipse starts at 7:32:28.1 PM
It will be annular for 3 minutes and 56.0 seconds at 12.9 degrees above the visual horizon
Annual Eclipse ends at 7:36:24.2 PM
Partial phase ends at 8:37:51.2 PM
right before sunset

89% chance of viewing the eclipse without significant impact form weather

going a bit north towards the centerline is an option as well

Reno / Stead Airport NV: (issue: high chance of clouds)

39 40 05.4370 N / 119 52 35.1827 W
1539.2 m
-7 hours

http://g.co/maps/39s24
http://www.airnav.com/airport/KRTS

Partial phase starts at 5:15:04.2 PM
Annual Eclipse starts at 6:28:19.2 PM
It will be annular for 4 minutes and 20.3 seconds at 19.4 degrees above the visual horizon
Annual Eclipse ends at 6:32:39.4 PM
Partial phase ends at 7:37:00.7 PM

31% chance of viewing the eclipse without significant impact form weather <= !! high chance of clouds !!

going a bit north towards the centerline is an option as well

Redding Municipal Airport, CA: (issue: moderate change of clouds)

40 30 32.4000 N / 122 17 36.2000 W
153.9 m
-7 hours

http://g.co/maps/q7xdd
http://www.airnav.com/airport/KRDD

Partial phase starts at 5:11:43 PM
Annual Eclipse starts at 6:26:34.2 PM
It will be annular for 4 minutes and 19.6 seconds at 20.9 degrees above the visual horizon
Annual Eclipse ends at 6:30:53.9 PM
Partial phase ends at 7:36:29.6 PM

61% chance of viewing the eclipse without significant impact form weather

going a bit north towards the centerline is an option as well

Page Municipal Airport near the UT/AZ border:

36 55 33.9000 N / 111 26 54.1000 W
1315.5 m m
-7 hours

http://g.co/maps/xr3ar
http://www.airnav.com/airport/KPGA

Partial phase starts at 5:24:15.5 PM
Annual Eclipse starts at 6:32:14.5 PM
It will be annular for 4 minutes and 18.9 seconds at 11.5 degrees above the visual horizon
Annual Eclipse ends at 6:36:33.4 PM
Sunset occurs just before end of Partial phase

91% chance of viewing the eclipse without significant impact form weather

going a bit south towards the centerline is an option as well

Window Rock Airport, AZ:

35 39 07.4000 N / 109 04 02.6000 W
2055.0 m
-7 hours

http://g.co/maps/kv9rm
http://www.airnav.com/airport/KRQE

Partial phase starts at 5:26:57 PM
Annual Eclipse starts at 6:33:33.5 PM
It will be annular for 4 minutes and 14.6 seconds at 9.4 degrees above the visual horizon
Annual Eclipse ends at 6:37:48.1 PM
Sunset occurs just before end of Partial phase

91% chance of viewing the eclipse without significant impact form weather

going a bit north towards the centerline is an option as well

Oroville Municipal Airport, CA: (issue: quite south of the centerline - shorter annular phase)

39 29 16.1000 N / 121 37 19.2000 W
59.1 m
-7 hours

http://g.co/maps/g5wp7
http://www.airnav.com/airport/KOVE

Partial phase starts at 5:13:52.4 PM
Annual Eclipse starts at 6:29:08.2 PM
It will be annular for 2 minutes and 19.2 seconds at 19.5 degrees above the visual horizon
Annual Eclipse ends at 6:31:27.4 PM
Partial phase ends at 7:37:38.6 PM

88% chance of viewing the eclipse without significant impact form weather

going a bit north towards the centerline is an option as well

Milford Municipal, UT: (issue: a bit north of the centerline - shorter annular phase)

38 25 35.8770 N / 113 00 44.8430 W
1536 m
-6 hours

http://g.co/maps/3639n
http://www.airnav.com/airport/KMLF

Partial phase starts at 6:21:23.7 PM
Annual Eclipse starts at 7:30:58.1 PM
It will be annular for 3 minutes and 19.4 seconds at 13.6 degrees above the visual horizon
Annual Eclipse ends at 7:34:17.5 PM
Partial phase ends at 8:36:04.2 PM

81% chance of viewing the eclipse without significant impact form weather

going a bit south towards the centerline is an option as well

Bryce Canyon Airport, UT:

37 42 23.2000 N / 112 08 44.9000 W
2313.4 m
-6 hours

http://g.co/maps/jhzgh
http://www.airnav.com/airport/KBCE

Partial phase starts at 6:22:51.7 PM
Annual Eclipse starts at 7:31:30.9 PM
It will be annular for 4 minutes and 0.8 seconds at 12.8 degrees above the visual horizon
Annual Eclipse ends at 7:35:31.8 PM
Partial phase ends at 8:36:31.3 PM

79% chance of viewing the eclipse without significant impact form weather

going a bit south towards the centerline is an option as well

Near centerline eclipse sites that are earlier in the day will generally offer more dramatic visual effects because the Sun will be higher in the sky. On the other hand weather along the coast may offer greater risks of being clouded out.

Clear Sky! - Enjoy!

chongo (Landon Curt Noll - eclipse-mail@asthe.com - +1 408.666.0888) /\oo/\

p.s. I plan to return to the South Pole Jan 1-14 2013 to search of more meteorites. We have 7 open slots. Let me know if you or if someone who know is interested. (See: http://www.landonnoll.com/Antarctica2011/Campers-List-Slideshow/16565986_EqLqV#li=1277978246&k=T6rHvQ4)