

# Sunset behind the UCSB oil rig

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Where would you have to stand to watch the sun set behind the UCSB oil rig?

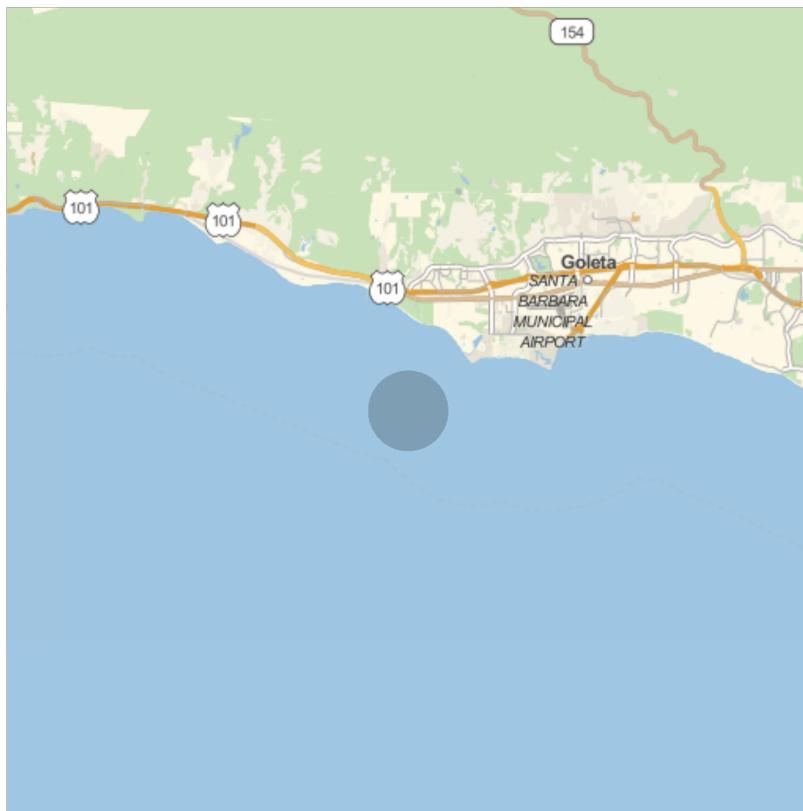
A: From Oct 25 to Feb 15, you'd have to stand somewhere between Campus Point and Camino Del Sur.

- Dec 15: "Window to the Sea" park in IV
- Jan 15: 8th floor of UCSB library
- Feb 15: Campus point (maybe Feb 12 better)

```
Clear["Global`*"]
```

## Oil rig

```
rig = {34.389868, -119.906356};  
GeoGraphics[GeoDisk[rig, 1 mi], GeoRange → 10 mi]
```

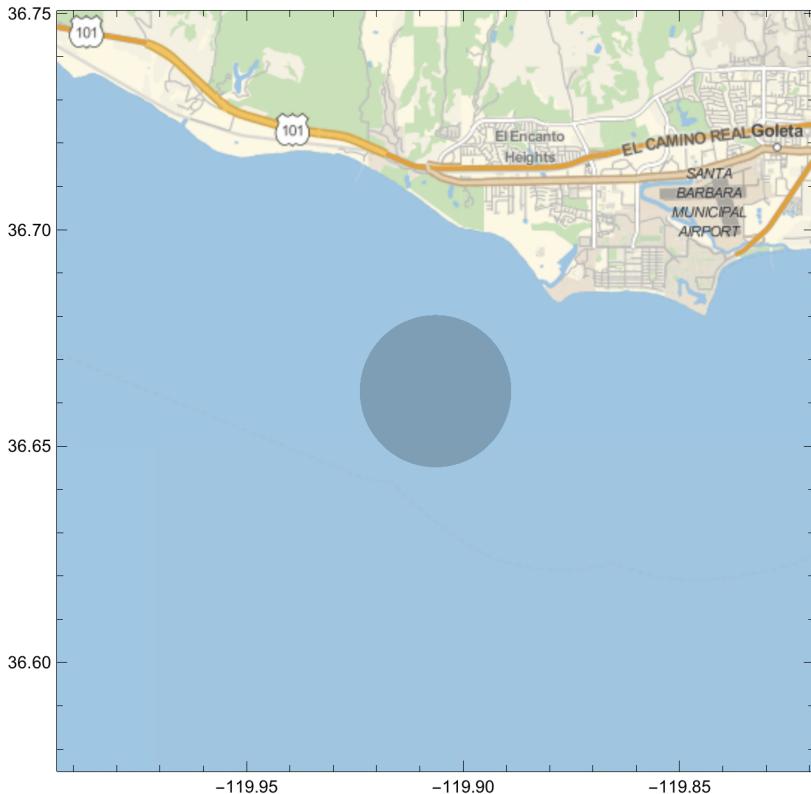


1 mi

1 mi

**FullForm[%]**

Quantity[1, "Miles"]

**GeoGraphics[GeoDisk[rig, 1 mi], GeoRange -> 5 mi, Frame -> True]****Sunset[]**

Fri 5 Feb 2016 17:34 GMT-8.

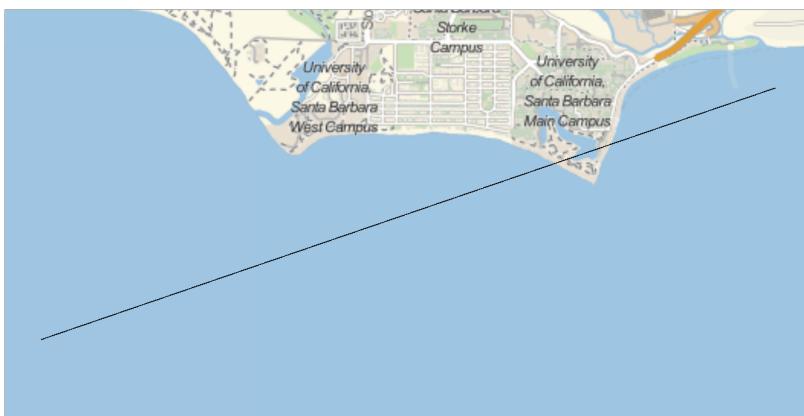
**SunPosition[]**

$$\{ 201.44^\circ, 36.94^\circ \}$$
**SunPosition[Sunset[]]**

$$\{ 251.21^\circ, -0.74^\circ \}$$

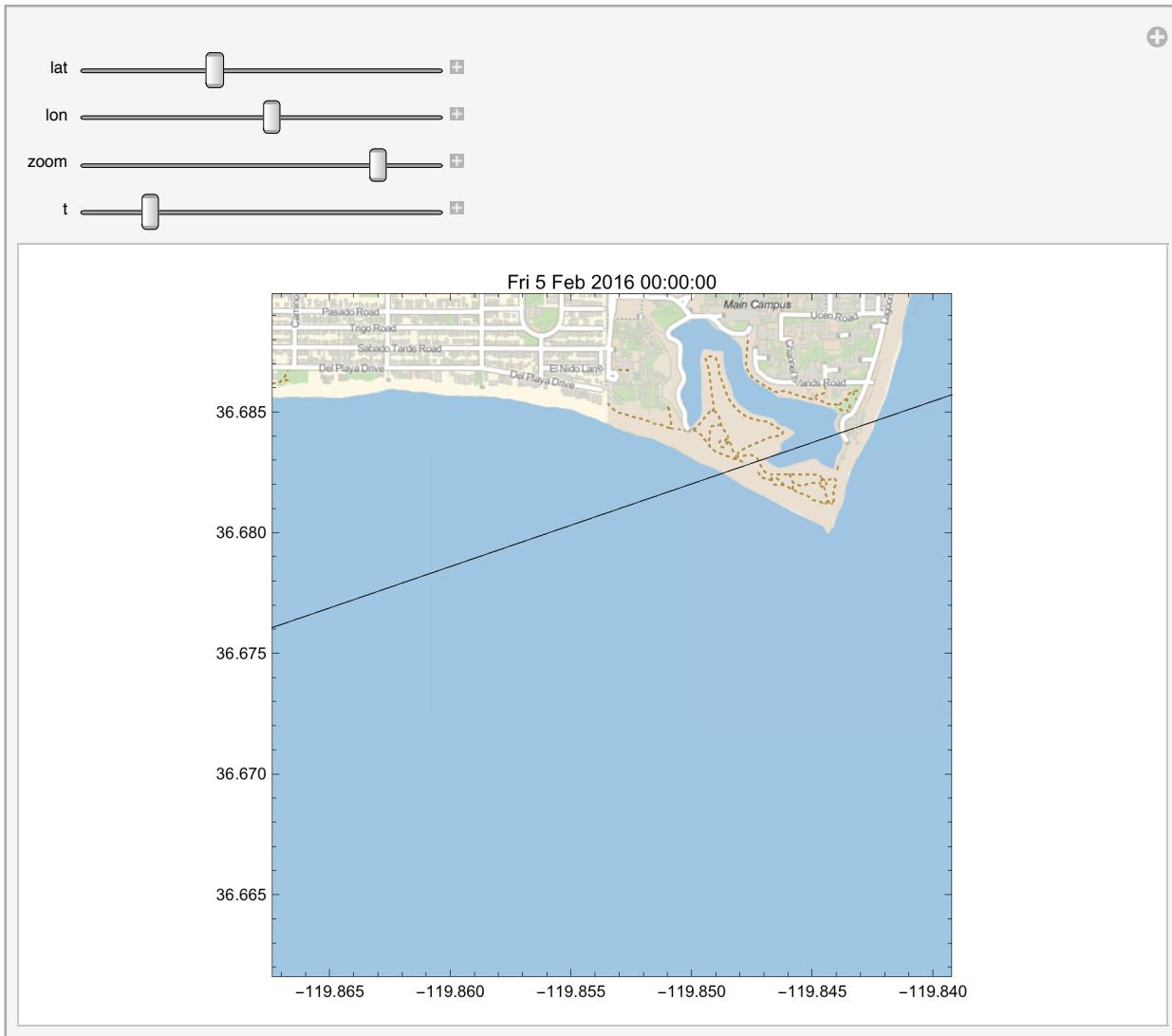
## Exploring

```
rig = {34.389868, -119.906356};  
angle = 180° + First@SunPosition[rig, Sunset[]];  
GeoGraphics[  
  GeoPath[{  
    rig,  
    GeoDestination[rig, GeoDisplacement[{8 km, angle}]]}]  
]
```



## Graphical User Interface

```
rig = {34.389868, -119.906356};
Manipulate[
  when = DatePlus["2015-12-08", t];
  (* need to hard-code the date I made this so that the bookmarks work.*)
  angle = 180° + First@SunPosition[rig, Sunset[when]];
  GeoGraphics[
    GeoPath[{rig, GeoDestination[rig, GeoDisplacement[{8 km, angle}]}]],
    GeoRange → Quantity[zoom, "Miles"],
    GeoCenter → {lat, lon},
    Frame → True,
    PlotLabel → when,
    ImageSize → {600, 400}],
  {{lat, rig[[1]], rig[[1]] + 0.03},
  {lon, rig[[2]], rig[[2]] + 0.1},
  {zoom, 5, .1},
  {t, 0, 365}},
  Bookmarks → {"library" → {lat = 34.41310`, lon = -119.8453`, t = 36, zoom = 0.15`},
  "campus point" → {lat = 34.40735`, lon = -119.8452`, t = 65, zoom = 0.48`},
  "solstice winter" → {lat = 34.41035`, lon = -119.8633`, t = 11, zoom = 0.15`}}
]
```



## Conclusion

At the winter solstice, to see the sun set behind the rig, you'd have to be where Camino Del Sur hits the ocean.

Therefore: Starting Oct 27 until Feb 16, you can see the sun set behind the rig if you're standing somewhere between campus point and the camino del sur bluffs.

From Feb 16 and Oct 27, the sun sets too high north to see it from anywhere near campus.

On Jan 15-16 2016, the sun will set behind the rig as viewed from the 8th floor of the UCSB library. Cool!