

Aurora Forecasts of the Icelandic Meteorological Office

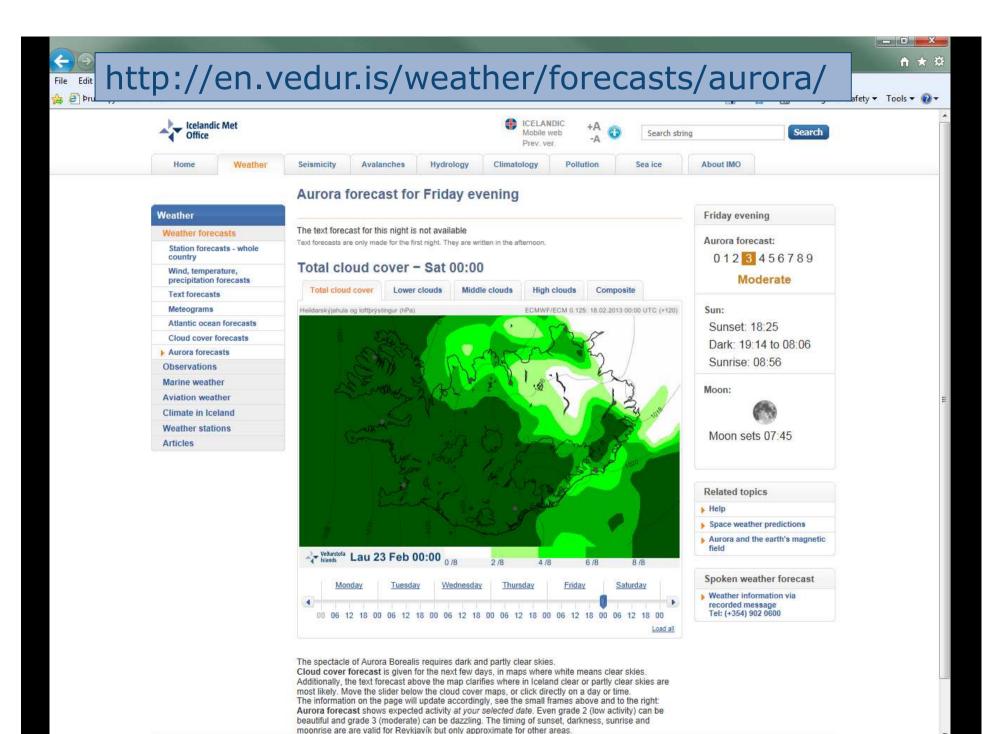
Þórður Arason

Veðurstofa Íslands Icelandic Meteorological Office, Reykjavík, Iceland

Overview



- Darkness
- Cloud cover
- 1d, 1yr, 11yr variations
- Web:
 - ▶ Forecast for the week 11-15 March 2013
 - ▶ Earth's magnetic field observations
 - Space weather forecasts
 - Weather forecast
- Dark places



Sunset and darkness hours



For Reykjavík 10-15 March 2013

- Sunset the Sun's disk disappears below the horizon
- End of civil twilight (CT) Sun's center 6° below horizon –
 sky still blue but stars start to appear overhead
- Dusk, end of astronomical twilight Sun's center
 18° below horizon sky completely dark

March 2013	Sunset	СТ	Dusk
10 Sunday	19:14	20:02	21:58
11 Monday	19:17	20:05	22:02
12 Tuesday	19:20	20:08	22:05
13 Wednesday	19:23	20:11	22:09
14 Thursday	19:26	20:14	22:13
15 Friday	19:29	20:17	22:17

The Moon

Icelandic Met Office

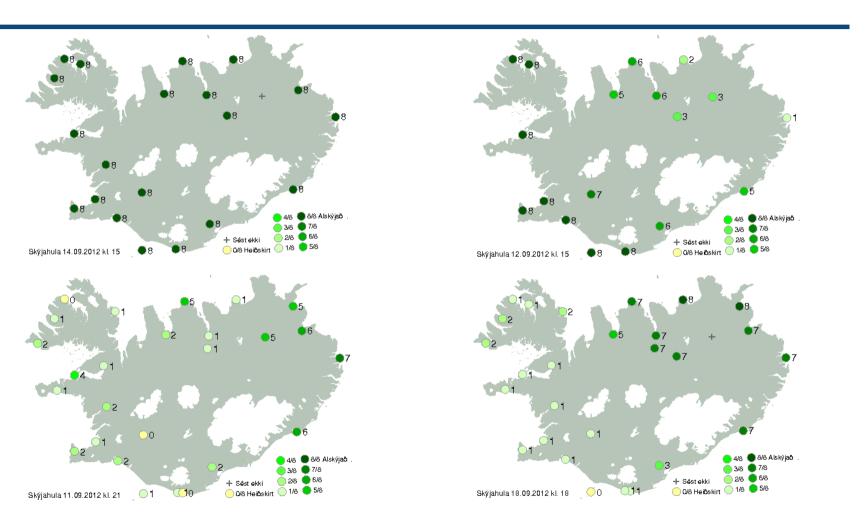
Reykjavík 10-15 March 2013

- Bright Moon can interfere with aurora viewing
- The Moon is useful for aurora photography illuminating the landscape

March 2013	The Moon
10 Sunday	Moon below horizon until morning
11 Monday	New Moon, Moonset 19:33
12 Tuesday	Moonset 21:02
13 Wednesday	Moonset 22:30
14 Thursday	Moonset 23:55
15 Friday	Moonset 01:16

Cloud cover variability



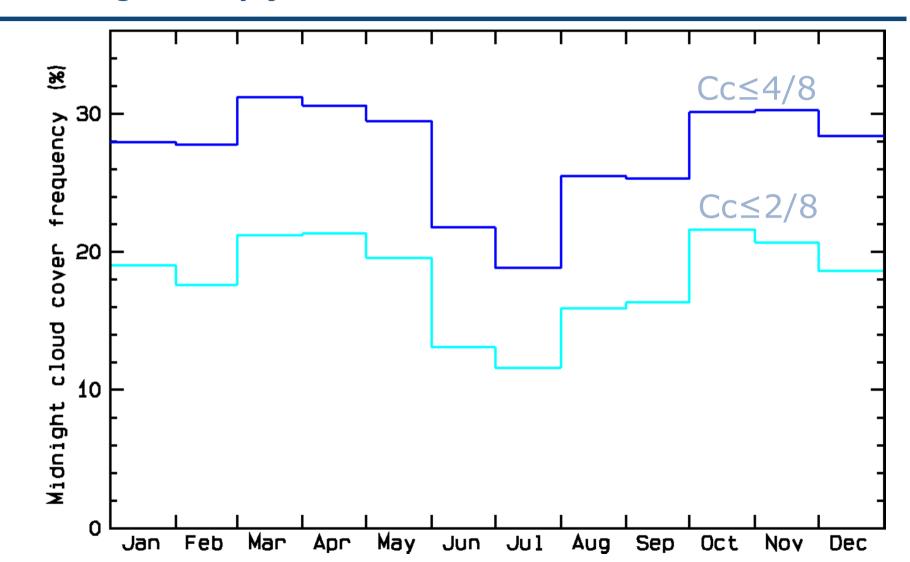


http://brunnur.vedur.is/athuganir/skyjahula/

Cloud cover annual variation



At midnight in Reykjavík 1981-2010



Probablity of half cloudy or better



- Chanches in Reykjavík during a single winter midnight is about 30%
- Best of three nights in a row gives chanches of 60%
- Best of five places around the coast (Rvk, Bol, Ak, Dt, Vm) during a single winter midnight gives chanches of 70%

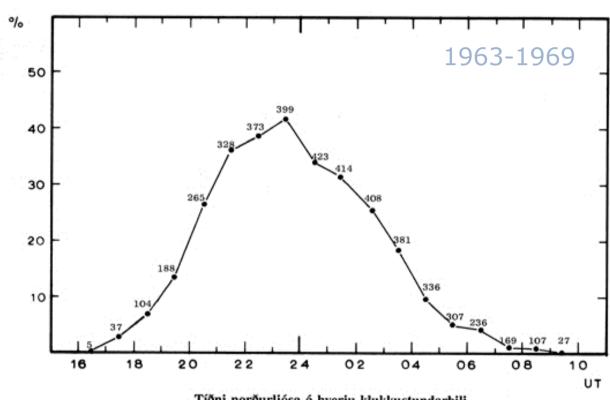
http://en.vedur.is/weather/forecasts/cloudcover/ http://brunnur.vedur.is/athuganir/skyjahula/



Aurora corona. Photo ÞA 19 September 2012

Diurnal variation of aurora in Reykjavík





Tíðni norðurljósa á hverju klukkustundarbili Tölur við feril tákna fjölda athugunarstunda Rjúpnahæð, nóv. 1963 – maí 1969

> Observations and graph from Porsteinn Sæmundsson http://www.almanak.hi.is/nordspar.html

Leirvogur Magnetic Observatory

Icelandic Met Office

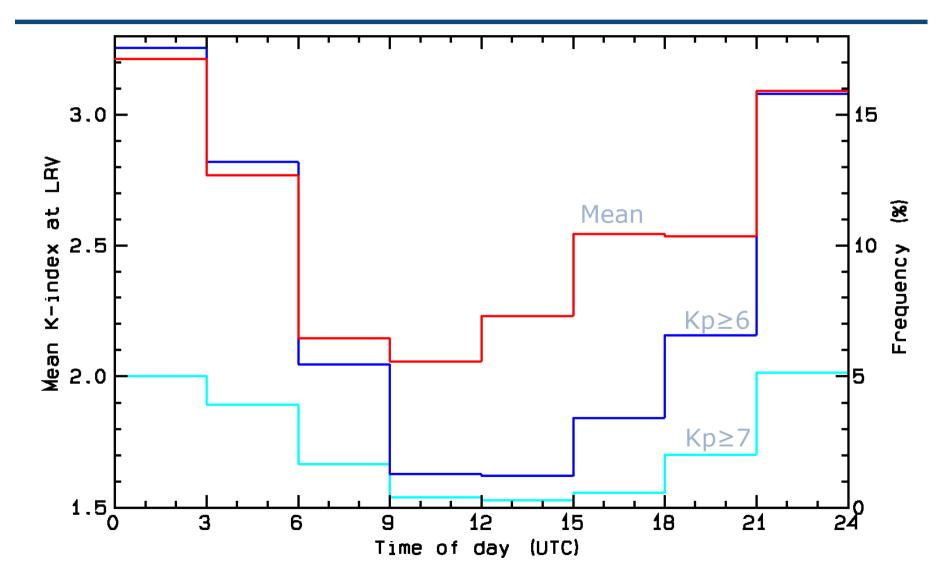
Science Institute - University of Iceland



The observatory, located about 12 km ENE from downtown Reykjavík, has been operated since 1957

Diurnal variation of K-index in Iceland | Icelandic Met Office | _____

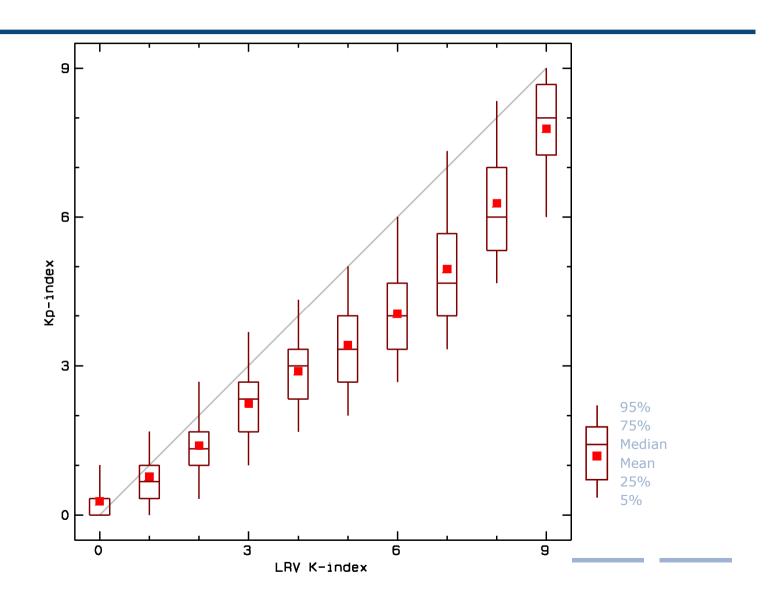
1999-2012



Kp-index vs. K-index in Iceland

Icelandic Met Office

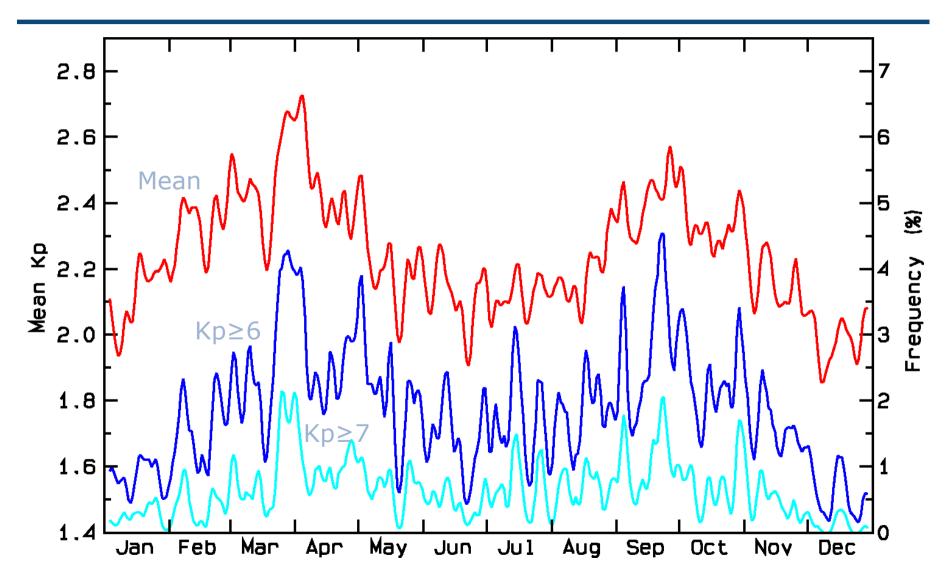
1999-2012



Annual cycle of Kp

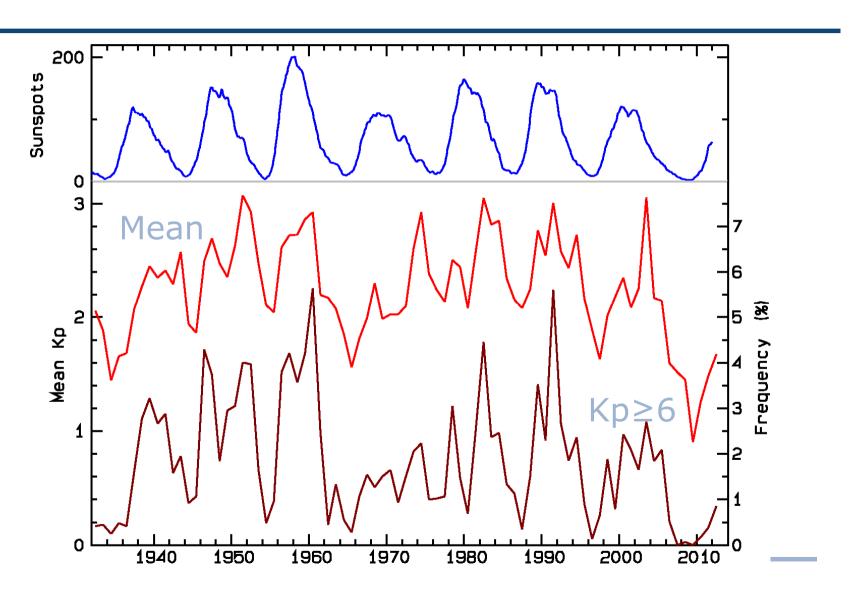
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1932-2012



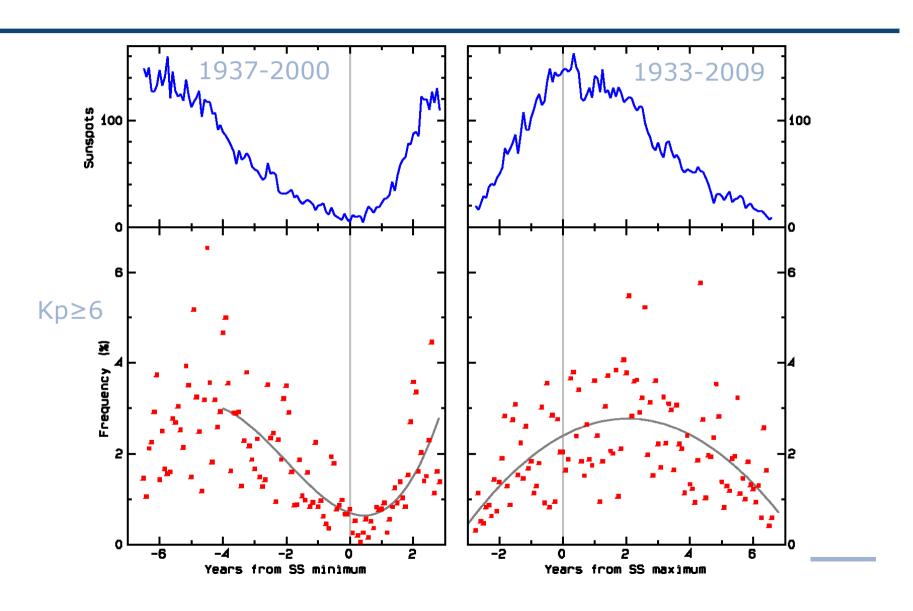
Sunspots influencing Kp





Stacked data to sunspot min/max







In Kópavogur. Photo ÞA 19 September 2012



In Kópavogur. Photo ÞA 19 September 2012



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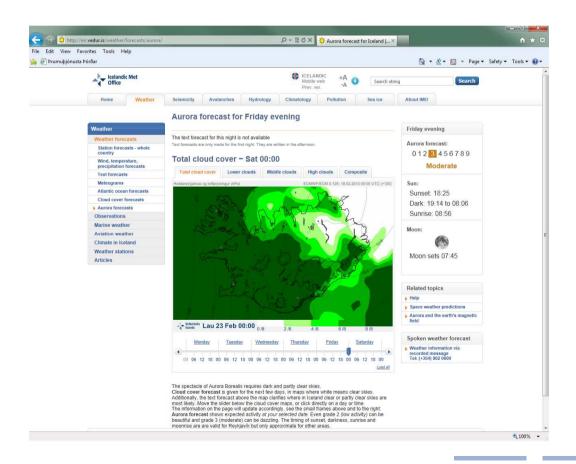


In Kópavogur. Photo ÞA 19 September 2012

Aurora Forecast on the Web

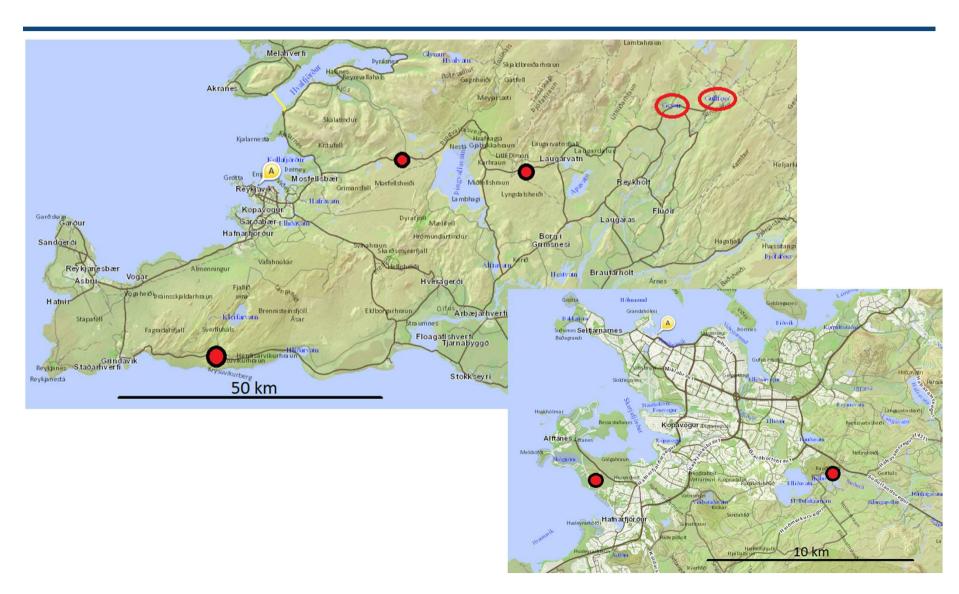


http://en.vedur.is/weather/forecasts/aurora/



Dark places





Dark places in downtown Reykjavík



