'Supermoon' to make mischief with sun and sea

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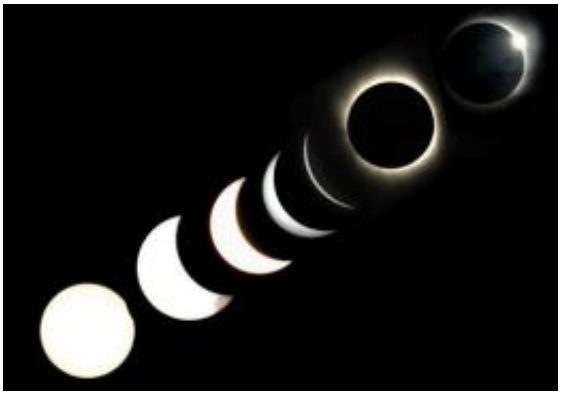

File photo shows the various stages of a total solar eclipse.

Norse legend has it that two giant wolves roam the sky—with Skoll chasing the moon and its brother Hati going after the sun.

If either manages to sink its teeth into its prey and hold it back, an eclipse occurs, the story goes.

Tales of cosmic wolves may once have been a useful way of explaining the weird and scary interval when the sun, the source of life on Earth, is briefly extinguished.

For astronomers, though, total eclipses occur when the moon sneaks between Earth and the sun, and the three bodies align precisely.

By quirky celestial symmetry, the moon as seen from Earth is just broad enough to cover the solar face, creating a breath-taking silver halo in an indigo sky pocked by daytime stars.

The moon will do this trick again on Friday for the only total solar eclipse of 2015, with a dramatic backdrop provided by Nordic islands on the roof of the world.

Then on Saturday the lunar magician will bemuse us again, this time with exceptional tides.

The reason: Earth's satellite will be a "supermoon," which happens at its closest point to our planet, called a perigee.

This, and the moon's alignment with the sun, will add to the gravitational pull on the seas—creating what is literally a high point in the 18-year lunar cycle.

"The eclipse and the tide are linked," says Kevin Horsburgh, head of the Marine Physics and Ocean Climate research group at Britain's National Oceanography Centre (NOC).

"For an eclipse to take place, the sun, the Earth and the moon need to be in a straight line, which is also an essential condition for high tides.

"And for particularly big tides, the moon needs to be directly overhead at the equator at the time."

On Friday, the moon's shadow will alight on Earth's surface at 0741 GMT in the eastern central Atlantic, according to Britain's Nautical Almanac Office. (astro.ukho.gov.uk/eclipse/0112015/)

By 0913 GMT, seen from a point about 700 kilometres (440 miles)

south of Greenland, the sun's face will be completely obscured.

This "path of totality" will follow a 5,800-kilometre curve across the farther north Atlantic, into the Arctic Ocean.

It will cross land in the Faroe Islands, a Danish archipelago halfway between Iceland and Norway, and the Norwegian island group of Svalbard.

"The path (of totality) ends at the North Pole at 1018 GMT," veteran astronomer Fred Espenak says on the specialist website EclipseWise.

Partial eclipses—which resemble a bite taken out of the sun—will be visible from Iceland, Greenland, Europe, North Africa, western and eastern Asia, ending at 1150 GMT.

London will have its deepest eclipse since 1999, with 85 percent of the sunlight blotted out.

The celestial ballet will on Saturday result in major tides most perceptible in Canada's Bay of Fundy, on the French Atlantic coast, in the Channel and North Sea—but even the Mediterranean will feel the difference.

France's Navy Oceanic and Hydrological Service (SHOM) has warned thrill-seekers to beware when the tide sweeps around Mont Saint-Michel, the ancient abbey-island located on the coast of Normandy.

Saturday's tide on the long, sloping estuary of the River Couesnon at the popular tourist spot will be a whopping 14.15 metres (46 feet)—the height of a four-storey building. The average tide there is 10.5 metres.

'Faster than a running man'

"It's going to be spectacular," says SHOM tide specialist, Nicolas Weber.

Locals say the incoming tide at Mont Saint-Michel outstrips a galloping horse.

While this is incorrect, said Weber, "it will come in faster than a running man. It will be dangerous to venture out too far."

Horsburgh, from Britain's National Oceanography Centre, said Saturday's tide would be several centimetres (inches) above last year's maximum overall, and in some places may even be slightly surpassed this September, which will also be an equinox, when high water occurs.

Weather is a big influence on a tide's fierceness—gales can whip up surges able to test the mighty barriers that protect the Netherlands and London from flooding.

"A storm surge can elevate water levels by around four metres in the North Sea on the Dutch coast and tend on the east coast of Britain and the Thames estuary to be around two, two-and-a-half metres in the event of a bad storm," Horsburgh told AFP by telephone.

In 2010, a sea surge, driven by a storm called Xynthia, flooded parts of the Vendee coast on France's Atlantic seaboard, killing 41 people.