

SB 393 STAFF MEASURE SUMMARY

Senate Committee On Veterans, Emergency Management, Federal and World Affairs

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Meeting Dates: 3/4, 3/18

WHAT THE MEASURE DOES:

The measure directs the Oregon Department of Emergency Management to study solar events' potential effects on the well-being of Oregonians. It defines "solar event" as a solar flare or coronal mass ejection resulting in geomagnetic effects on the earth.

Fiscal impact: Fiscal impact issued

Revenue impact: No revenue impact

ISSUES DISCUSSED:

- Carrington Event of 1859 and effect on electrical infrastructure
- Vulnerability of satellites and power grid
- Resources and funding OEM would need to study this topic
- Awareness of the solar events and preparedness for their risks
- Underlying science of the effects on the power grid

EFFECT OF AMENDMENT:

No amendment.

BACKGROUND:

A solar flare is an eruption of electromagnetic radiation from the Sun, which can last between a few minutes to a few hours. These travel at the speed of light. Upon reaching Earth, this radiation can cause a radio blackout or impact power grids and navigation signals.

A coronal mass ejection is a large cloud of plasma and magnetic fields ejected into space from the Sun. These travel slower than light speed, but expand in size as they move and are stronger than background solar wind – the particles emanating from the sun's corona. They can damage electronic equipment and affect high-flying aircraft. They can also disturb the Earth's magnetosphere.

Geomagnetic storms result from solar wind variations, with the largest such storms prompted by coronal mass ejections. The Aurora Borealis comes from the collision of charged particles during these storms, though the storms also disrupt and damage electronic equipment and power grids.

The Space Weather Prediction Center within the National Oceanic and Atmospheric Administration monitors space weather conditions and classifies geomagnetic storms, solar radiation storms, and radio blackouts on 5-category severity scales, with descriptions of their effects.

Senate Bill 393 directs the Oregon Department of Emergency Management to study solar events' potential effects, defining "solar event" as a solar flare or coronal mass ejection with geomagnetic effects.