



EU/ESA Research Programs to Improve Space Weather Services

Juha-Pekka Luntama
ESA SSA Programme Office

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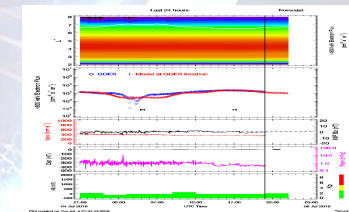


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EU Space Weather Activities

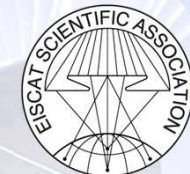


- EC Framework Programmes (FP7, H2020)
 - Scientific research and prototyping projects
 - Over 30 projects funded since 2007
 - Next FP to be started in January 2021
 - European Research Council
 - Scientific research projects
- => Results utilised by ESA SSA R2O activities



Alert Viewer		
	Latest issued alert	Impact risk
Geomagnetic Storm Alert	No alert since 20 days	Nothing to report
SEP Proton Storm Alert > 10 MeV	No alert since 78 days	Nothing to report
SEP Proton Storm Alert > 60 MeV	No alert since 78 days	Nothing to report

Legend: ★ ... an alert has been issued
 ... risk impact (timing and level): low, medium, high
 Click on the icons to see alert details



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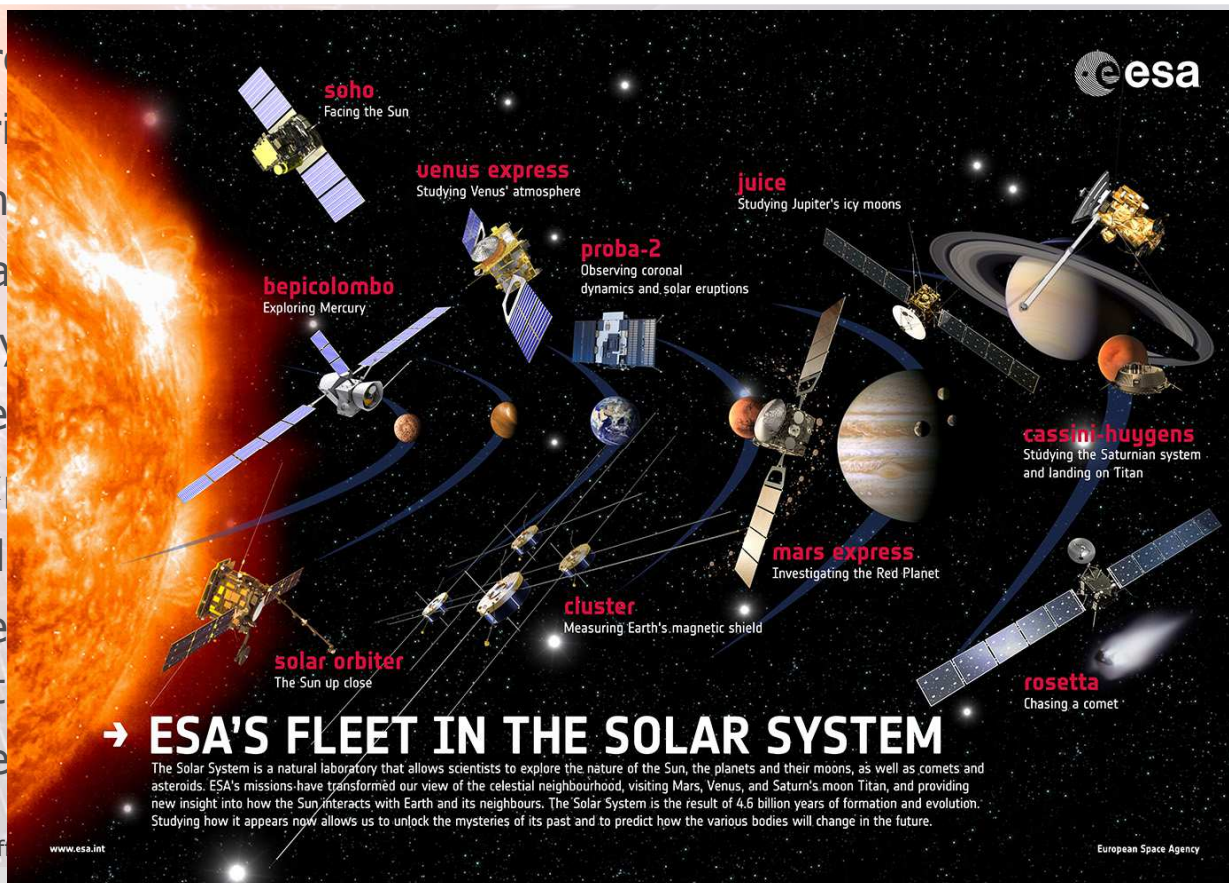


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Space Weather Research in ESA Programmes



- Science Programme
 - Driving
 - Improving
 - Managing
- Technology
 - Developing
 - Exploiting
- Integrated
 - Developing
 - Implementing
- ESA Space



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ESA SSA Federated Space Weather System



Data archives

- SSA SWE Data Centre (Redu)
- Federated data repositories

SSA SWE Coordination Centre

- User Helpdesk
- Space Pole, Belgium

SWE Expert Service Centres (ESCs)



Sensor systems



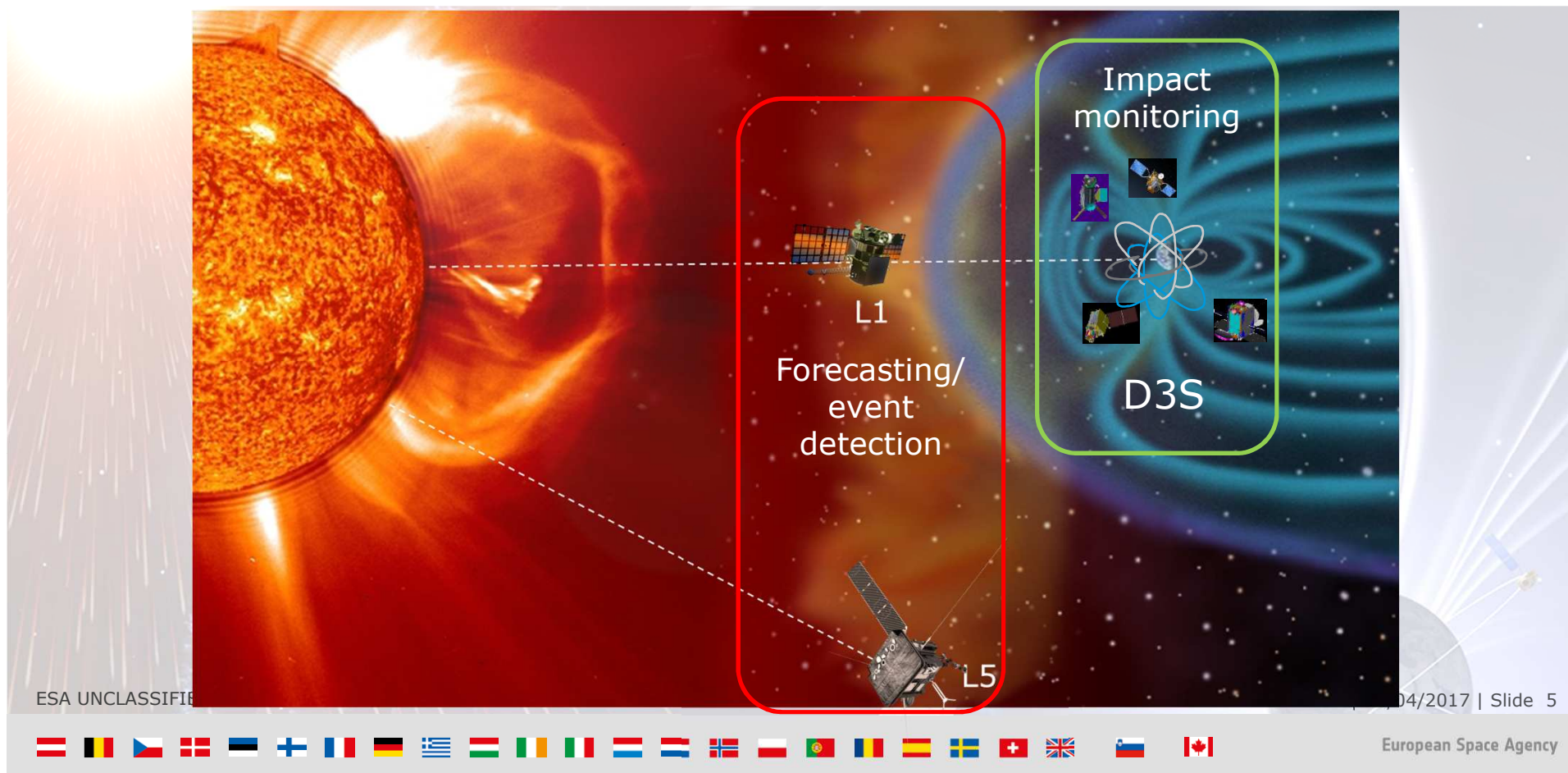
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SSA SWE Space Segment Objective



Challenges for Improving Space Weather Services



- Understanding space weather impacts on infrastructure
=> better understanding of needs of end users
- Developing physics based space weather models
- Providing accurate space weather forecasts
- Ensuring long term availability of measurement data
- Validating space weather products and services
- Coordinating information to operational end users

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