

Space Weather activities in Austria

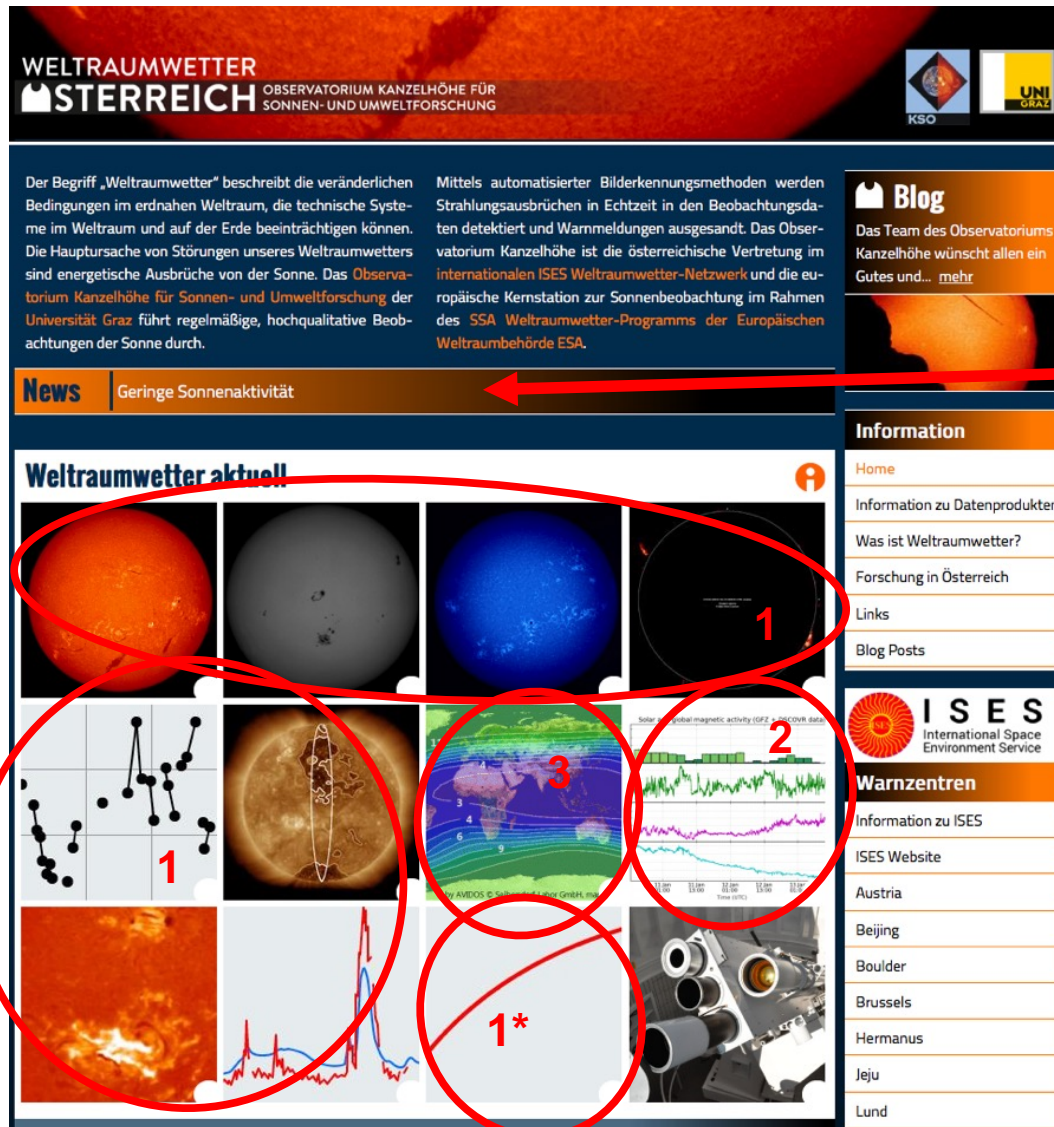
ISWI steering committee meeting 2022

presenter: Manuela Temmer
University of Graz (on behalf of the Austrian Space Weather Community)



Weltraumwetter.at / Spaceweather.at

new portal covering ALL key players aimed for 2022+!



Kanzelhöhe Solar Observatory (UNI Graz) – ISES RWC for Austria

Public outreach

Alerts (based on automatic flare detection at KSO)

Space Weather (research, services, satellites) in Austria:

- University of Graz **1**
- Conrad Observatory **2**
- Seibersdorf Laboratories **3**
- IWF Graz / Space Research Institute
- [University of Zagreb] **1***

Space Weather services from Austria



Space Weather is an important issue of global matter and global efforts but needs also coordinated collaboration on a national level. The *University of Graz* and its Kanzelhöhe Observatory for Solar and Environmental Research (KSO) is ISES member and regional Space Weather warning center of Austria (weltraumwetter.at/spaceweather.at).

The *Conrad Observatory (ZAMG)* currently leads an FFG funded project SWAP (2021-2023) outlining plans to consolidate and expand on Space Weather efforts in Austria and create a national data portal. The consortium behind the proposal is made up of **8 national partners**, with both research groups and industries affected by space weather contributing.

- Beginn: 1. Juli 2021
- 8 Projektpartner + 3 assoz. Partner.
 - ZAMG (12.5 PM)
 - TU Graz IEAN (8.6 PM)
 - Uni Graz (6 PM)
 - IWF (5.1 PM)
 - TU Graz IFG (3.5 PM)
 - Seibersdorf Lab (2.06 PM)
 - Joanneum Research (1.75 PM)
 - APG (1.1 PM)
 - *BM Landesverteidigung*
 - *AustroControl*
 - *Landeswarnzentrale Niederösterreich*



SPACE WEATHER State-of-the-Art

Weltraumwetter: Stand der Technik

Bericht als Teil des FFG-Projekts SWAP
Space Weather: The Austrian Platform
Dez. 2021



SWAP

Space Weather Austrian Portal – a joint project (Kick-off July 2021)

SWAP – Das Projekt

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Summary

Space Weather is an important issue of global matter and global efforts but needs also coordinated collaboration on a national level.

- Austria currently covers 4 out of 5 service domains from the **ESA/SSA Expert Service Centers** on *Solar Weather, *Heliospheric Weather, *Space Radiation, and *Ionospheric Weather <https://swe.ssa.esa.int/expert-centres>
- We will deepen our national collaboration on Space Weather with industrial partners and “end-users” (**FFG project SWAP**)
- We will bring our current internet presentation to the next level supporting industrial partners spaceweather.at/weltraumwetter.at
- Austria fully supports the UN COPUOS Expert Group Recommendations.
- We aim to create a national roadmap for the future strategic development and promotion of space weather research (funding is needed!).
- Helio4Cast – Space Weather forecast made in Austria: <https://helioforecast.space>

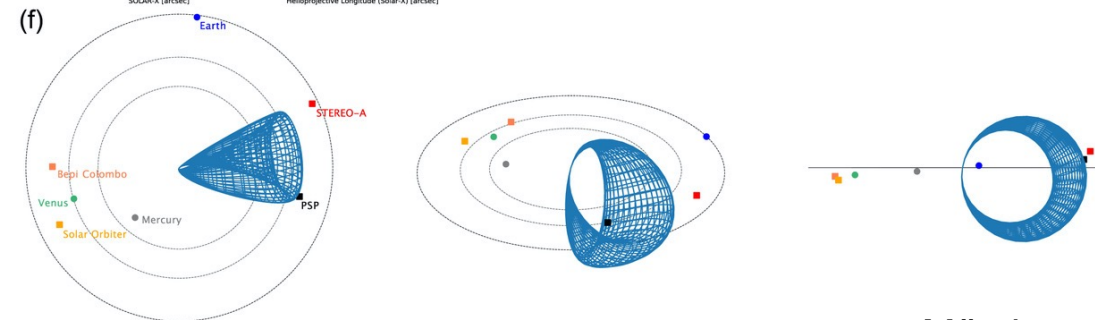
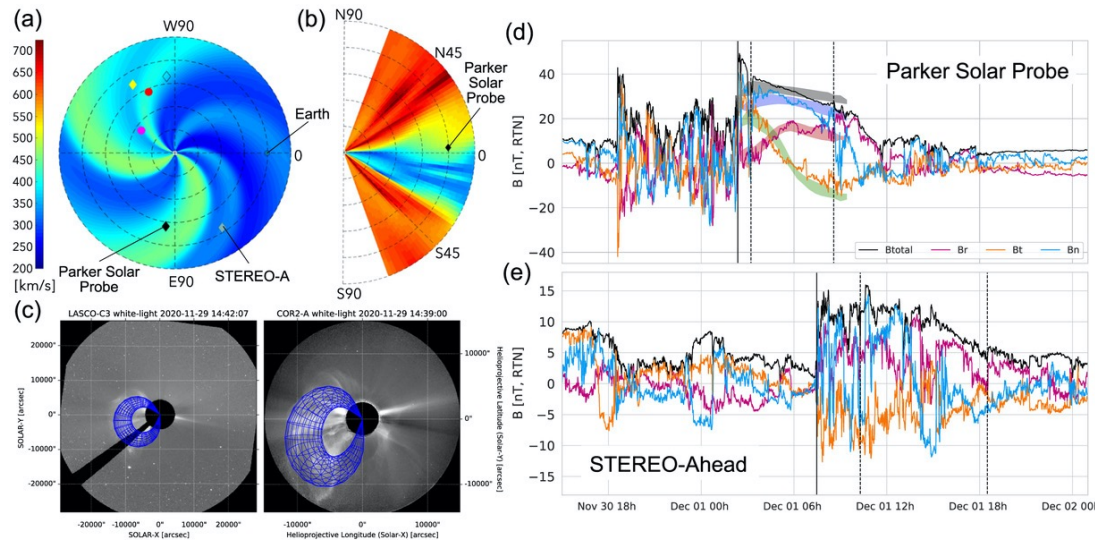


Parker Solar Probe and Solar Orbiter
—
**support for Space Weather research
and operational forecast**

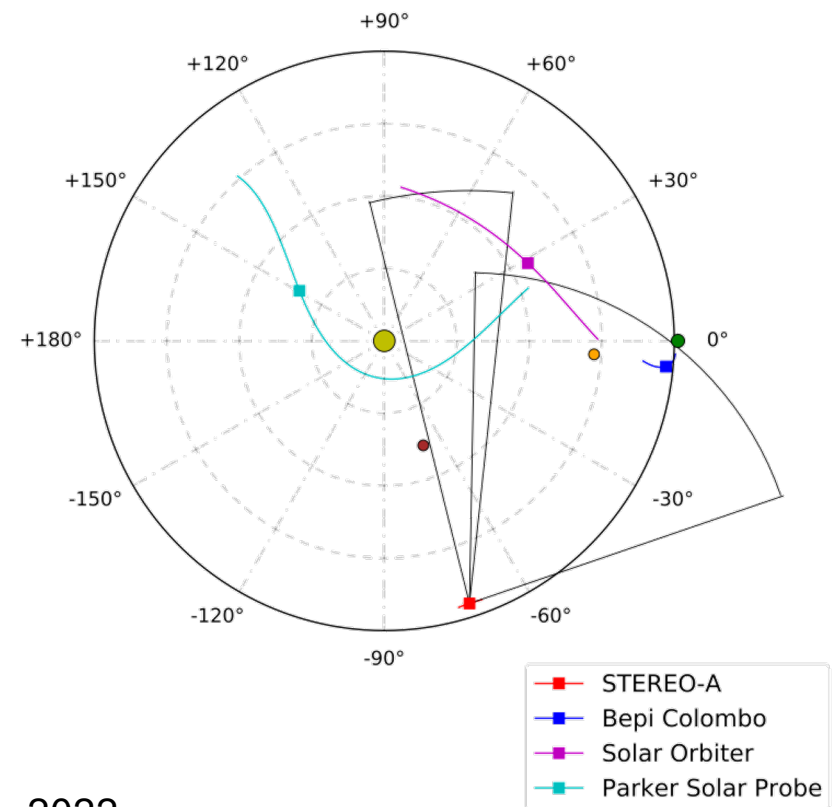
Parker Solar Probe and Solar Orbiter

Real time in-situ measurements and remote sensing image data from various s/c constellations.

- Studies on magnetic coherence of ICME structures
- Enhancement of lead times for forecasting Space Weather
- Test campaigns when in L4/L5 location for future missions such as Lagrange



Weiss et al., 2021



Möstl et al., 2022