



Report from the MiniMax24 Working Group of ISEST/MiniMax24

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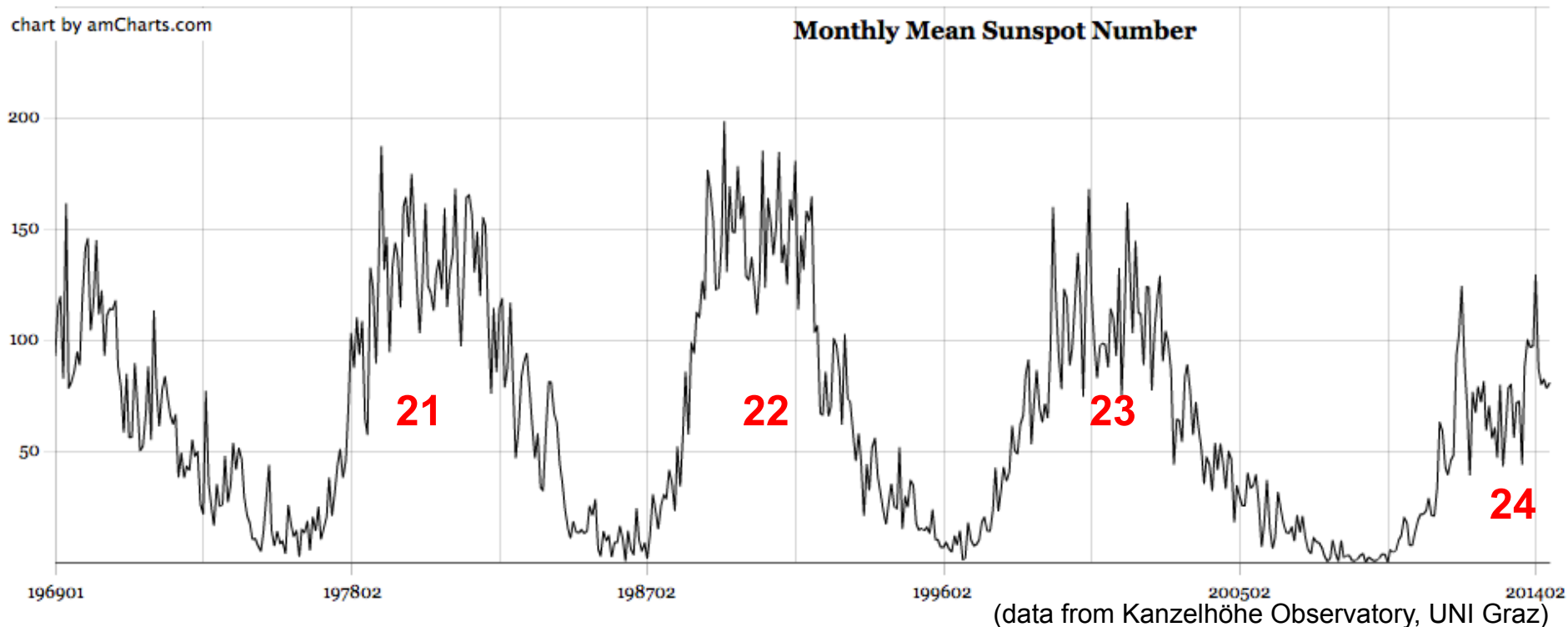
Update ...

WG 7

What does the Working Group - MiniMax24?

Despite the very low solar activity of the current solar cycle 24, our aim is to monitor solar and geospace through a network of international participants. Besides flares, we especially focus on filament eruptions and recurrent high speed solar wind streams emanating from coronal holes – relevant space weather factors in times of low activity.

MiniMax24 coordinates international observations and acts as long-term campaign providing daily updates on solar and geospace events. The MiniMax24 email list is also a **"come-into-contact platform"** with a broad range of experts.



Diversity of VARSITI

- The MiniMax24 email list reaches more than 140 participants from more than 30 countries.
- Huge platform of experts in different fields of solar and heliospheric physics – we communicate daily!
- Emails are sent by a team of about 7 persons (UNI Graz, Kanzelhöhe Observatory, UNI Zagreb) – wanna be part of the team? Contact: manuela.temmer@uni-graz.at
- Subscribe and receive MiniMax24 non-flare targets: varsiti_isest_minimax24@stelab.nagoya-u.ac.jp

Daily email from MiniMax24

- 1. Non-flare Target – selected by the MiniMax24 campaign team (large coronal holes close to central meridian, large filaments within +/- 30° of central meridian likely to erupt)
- 2. Information on current flare activity (MaxMillenium)
- 3. We encourage the community to initiate joint event studies*

Werner Pötzi

An: varsiti_isest_minimax24@stelab.nagoya-u.ac.jp
ISEST/MiniMax24 non-flare Target

Potentially geoeffective coronal hole close to the central meridian.

The CH has a ratio area of 0.21 and its high speed solar wind stream is estimated to reach Earth on September 20 at 14:00UT with a speed of 521 km/s. The position of the CH on September 16 at 08:00UT is: S45E10 (Solar X = -200°, Solar Y = -600°)

Filament target within ±30 degrees from central meridian.

The central part of the filament is located at N08W25 and it spans around 10° in E-W direction and 15° in N-S direction (El Teide: 2014-09-16 09:17 UT).

Flare activity:

low activity , see more details under

http://solar.physics.montana.edu/max_millennium/mmmotd_latest/index.html

ISEST/MiniMax24 Wiki:

We encourage all to do joint event studies - use the platform:

https://igam07ws.uni-graz.at/mediawiki/index.php?title=Main_Page:Event_Studies

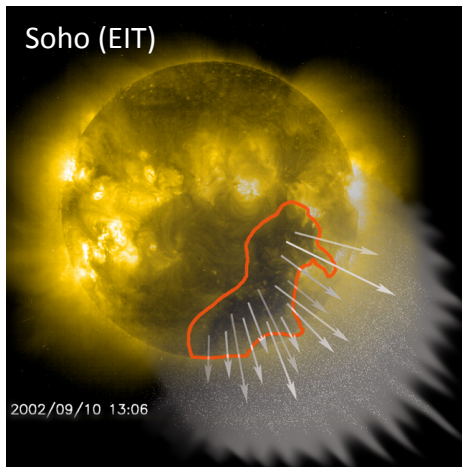
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* ISEST wiki platform

http://solar.gmu.edu/heliophysics/index.php/The_ISEST_Event_List

Solar wind high-speed streams

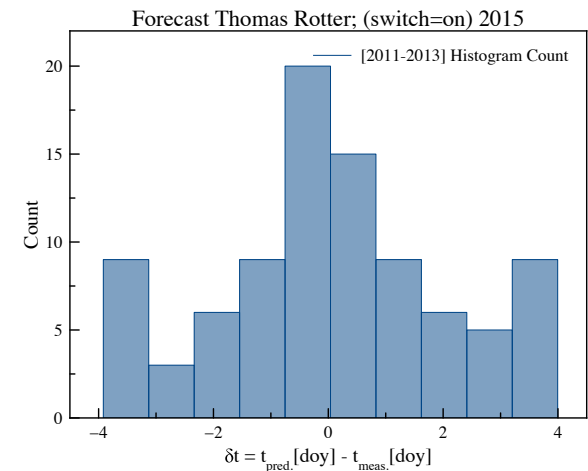
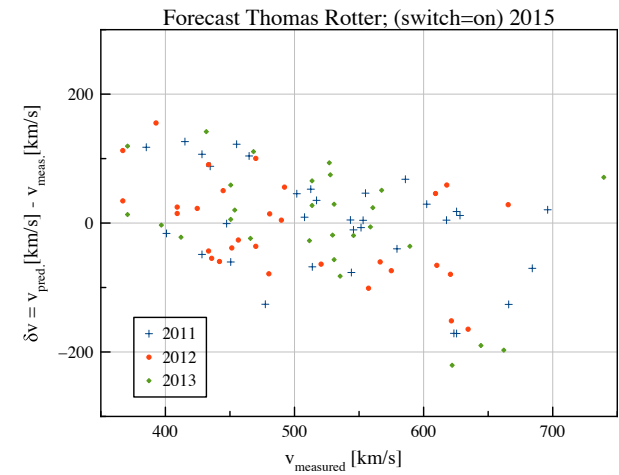
Forecasting of solar wind (SW) high speed streams (HSS) is based on the detection of coronal hole areas (cf. Vrsnak, Temmer, Veronig, 2007).



The SW forecast algorithm from Rotter et al. (2015), is statistically evaluated. Results show:

- *) bias towards an too early forecast (~ 1 d).
- *) slow SW speed (< 480 km/s) is overestimated
- *) high SW speed (> 610 km/s) underestimated.

We need to improve the SW speed forecast algorithm. Users of this service are, e.g., MiniMax24, AFFECTS (Uni Göttingen, V. Bothmer), DBM model (Uni Zagreb, B. Vrsnak).

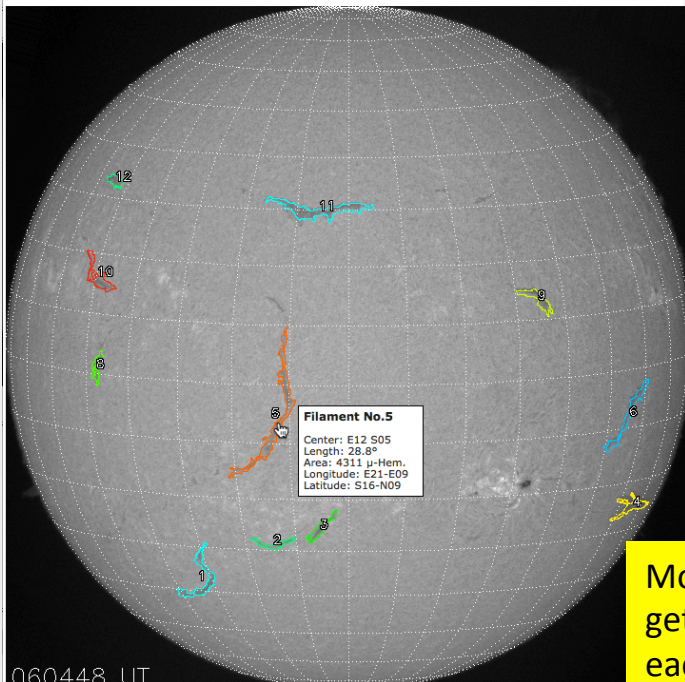


Automatic filament detection at KSO: in operation for MiniMax24 since summer 2015

As a new tool, we present the automatic filament detection algorithm established at Kanzelhöhe Observatory in the frame of the ESA SSA programme. See Pötzi et al., 2015 (Solar Physics).

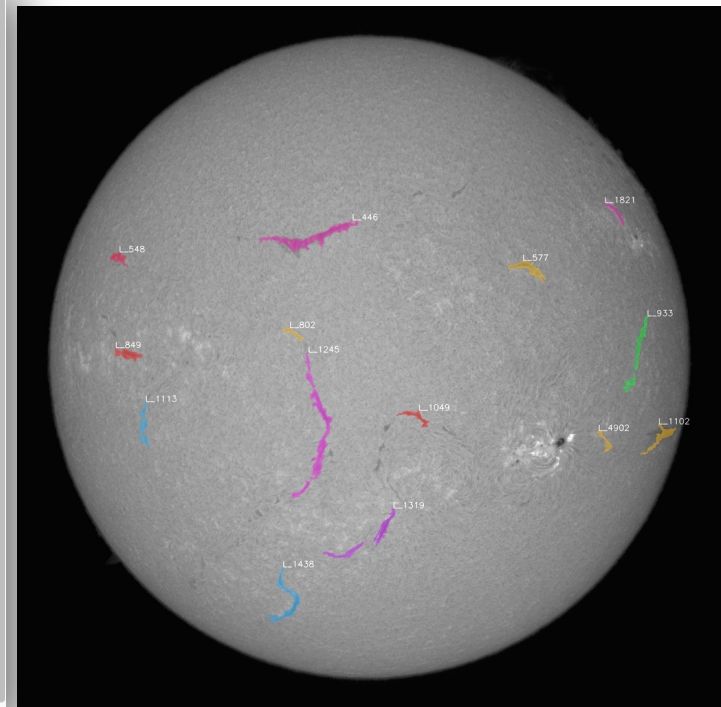
cesar.kso.ac.at/sniv_data/filaments/2015/20150810/20150810.php

Filament data for 20150810



Filament	Position (Center)	Length [deg]	Area μ-Hemiph.	Longitude from - to	Latitude from - to
1	E33 S37	18	3717	E41-E28	S41-S29
2	E14 S28	9	1082	E18-E10	S30-S27
3	E05 S25	9	1279	E08-E02	S28-S21
4	W66 S25	18	3678	W58-W75	S27-S22
5	E12 S05	29	4311	E21-E09	S16-N09
6	W55 S07	17	2867	W49-W61	S13-S02
7	W05 S06	7	850	W02-W07	S08-S04
8	E47 N01	7	1043	E48-E45	S02-N03
9	W34 N13	8	1476	W30-W37	N10-N15
10	E49 N16	12	2254	E54-E44	N13-N20
11	E05 N30	22	4107	E16-W04	N27-N32
12	E54 N33	7	1244	E57-E51	N31-N34

Mouse sensitive map:
get additional info of
each detected filament



Service: support of observing campaigns

MiniMax24 supported in 2014 two THEMIS/Hinode/IRIS prominence observing campaigns.

The MiniMax24 team sends daily target locations (current location + 48h and 72h in advance) and encourages other observers to join.

Unfortunately, there were NO observing campaigns announced in 2015.

Filament target within ± 30 degrees from central meridian.

Central position N09W08 spanning about 10 degrees in E-W and 5 degrees in N-S (Udaipur Observatory, May 21 2014 0700UT)

Central position S37W21 spanning about 10 degrees in E-W and 5 degrees in N-S (Udaipur Observatory, May 21 2014 0700UT)

Central position S23E30 spanning about 10 degrees in E-W and 10 degrees in N-S (Udaipur Observatory, May 21 2014 0700UT)

Support for THEMIS-IHOP campaign on prominences (N.Labrosse, B.Schmieder):
Derotated filament target (central part) for

+24h (May 22 07:00 UT): N09W22 (solar x=370", solar y=150")

S37W35 (solar x=-540", solar y=-520")

S22E19 (solar x=-280", solar y=-330")

+48h (May 23 07:00 UT): N09W35 (solar x=540", solar y=150")

S37W45 (solar x=550", solar y=-560")

S22E05 (solar x=90", solar y=-330")

+72h (May 24 07:00 UT): N09W50 (solar x=710", solar y=140")

S37W59 (solar x=650", solar y=-550")

S22W08 (solar x=100", solar y=-350")

For flare target see:

http://solar.physics.montana.edu/max_millennium/mmmotd_latest/index.html

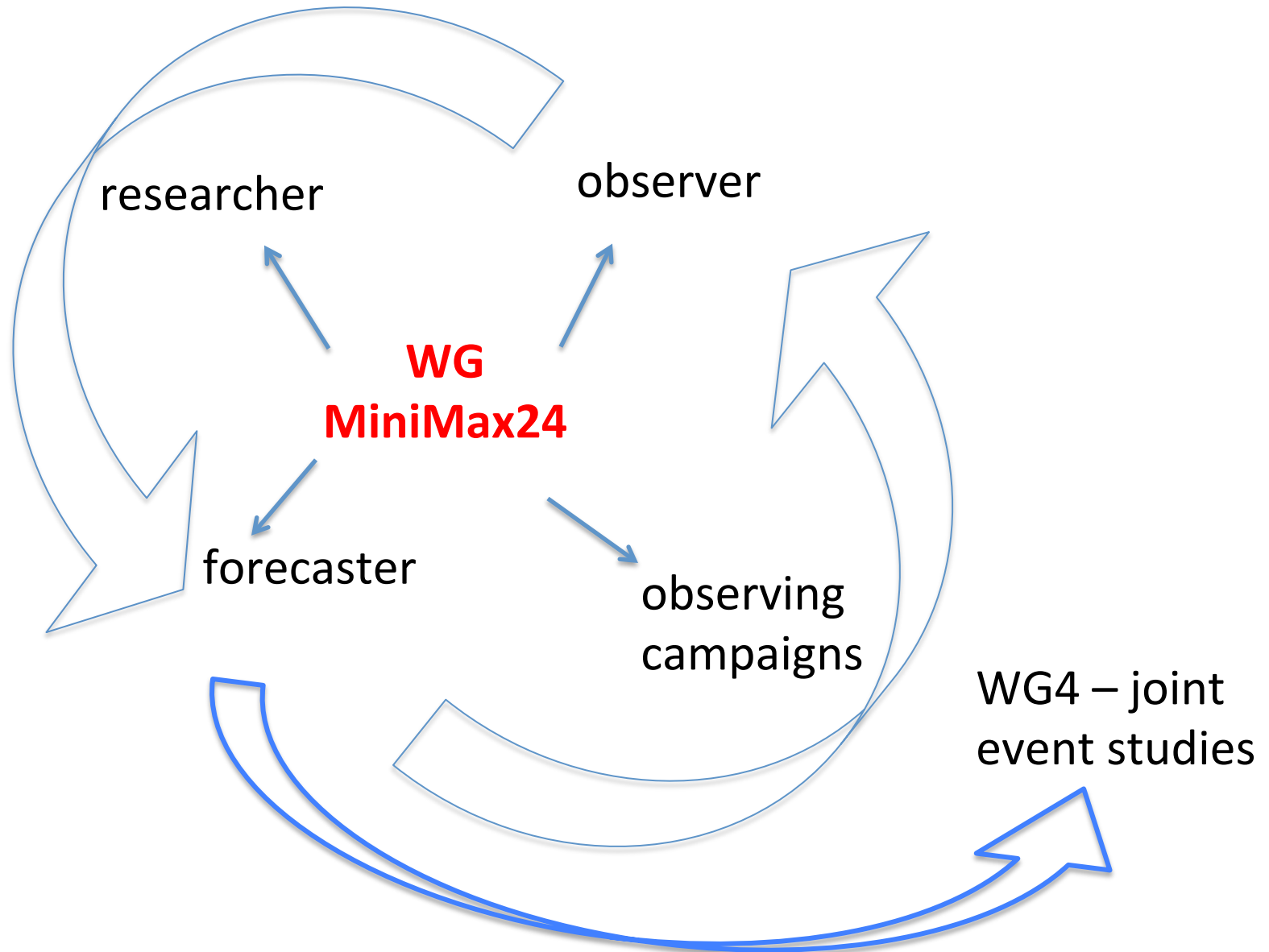
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Cheers,
Kamalam

MiniMax24 – *come-into-contact-platform*



Improvements on providing non-flare targets and future plans

Since Sept. 24, 2015 UNIGRAZ is one of ESA's Expert Service Center for *Heliospheric Weather* (<http://swe.uni-graz.at>). In this respect, we will permanently update and maintain our services.

The HSS forecast algorithm, used by MiniMax24 and CME forecast methods, will be improved in the near future. (cf. first tests using machine learning algorithms - Reiss et al., 2015, SWSC).

The automatic algorithm from Kanzelhöhe Observatory for filament detection is actively running for MiniMax24. A statistical evaluation of the method will be given in the near future. We are still working on the automated real-time filament detection algorithm. See <http://cesar.kso.ac.at>.

A great community effort to
study and better understand
solar-terrestrial processes!

