FP7 HELCATS – ROB Meeting
WP8 Dissemination

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RAL Space

Overview

- Overview
- Update to web site
- Press Release
- Document numbering and template
- First HELCATS open meeting

Overview

- Dissemination is a vital part of the project.
- The primary aim of the dissemination activity WP8 is to support the other work packages and the project as a whole in getting the results of the HELCATS work to broader heliospheric community and other interested parties outside the project.
- An important aspect is coordination of the standardisation of products in terms of formats, naming conventions, metadata, QA and configuration control.

Tasks

- T8.1: To publish the results of the studies in the professional literature, and present them at major international science meetings.
- T8.2: To arrange annual, open meetings for the scientific community during the lifetime of the project.
- T8.3: To install all relevant documents, catalogues, publications on the project website.
- T8.4: To integrate into relevant, established community facilities and websites, including the IRAP propagation tool, the AMDA data-mining tool, HELIO and the UKSSDC.
- T8.5: To disseminate information and results to the public and policy makers.

Deliverables

List of deliverables

Delive-rable Number[61]	Deliverable Title	Lead benefi-ciary number	Estimated indicative person-months	Nature[62]	Dissemi-nation level[63]	Delivery date[64]
D8.1	Publication in the professional scientific literature	1	2.50	Other	PU	36
D8.2	Annual open meetings	1	1.50	Other	PU	36
D8.3	Attendance/presentations at major science meetings	1	1.50	Other	PU	36
D8.4	Posting information on the website	1	3.50	Other	PU	36
D8.5	Integration with community facilities and websites	1	3.50	Other	PU	36
D8.6	Production of press releases, public talks	1	2.00	Other	PU	36
D8.7	Integrate the J-map associated catalogues produced in HELCATS to the propagation tool.	3	3.00	Report	PU	36
D8.8	Integrate Carrington Map associated catalogues in the propagation tool	3	3.00	Report	PU	36

Publication of results and conclusions

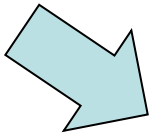
This activity includes supporting individual work package and project level dissemination of results through the professional literature and at international science meetings. [D8.1 & D8.3]. Will coordinate through the steering committee.

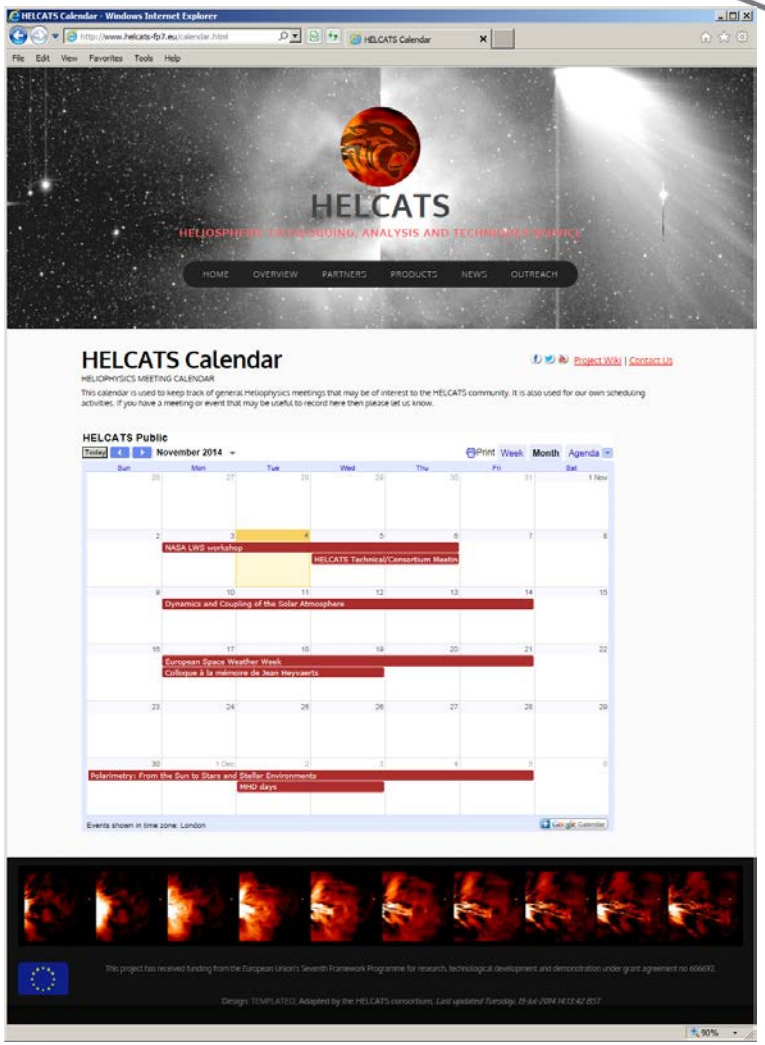
Standard resources such as templates, logos, flyers and contact cards will be available to help promote the activities within the wider community.

A list of publications, presentations and other outreach activities will be maintained and accessible via the HELCATS web site.

Related to this activity is the engagement with the public and policy makers through press releases, presentations, social media and related activities [D8.6]. In particular interaction with national/international space weather programmes exploiting existing contacts within the consortium.

HELCATS Web Site

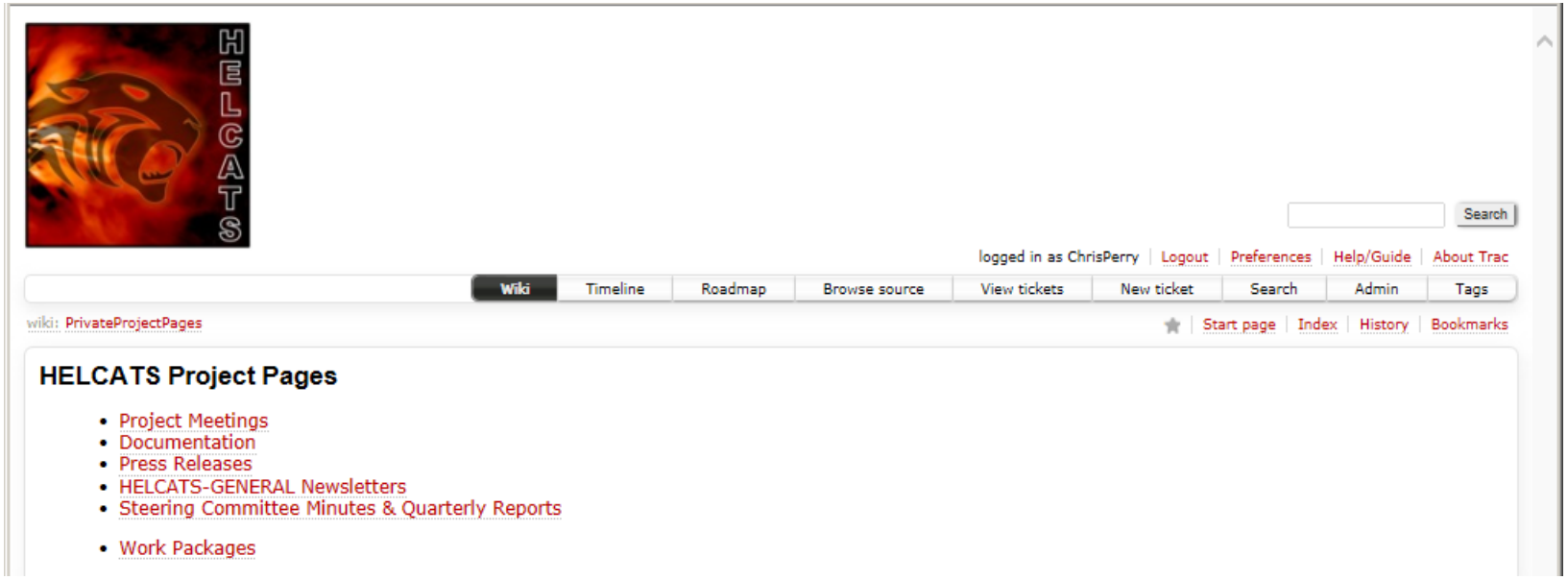




Public Web Site

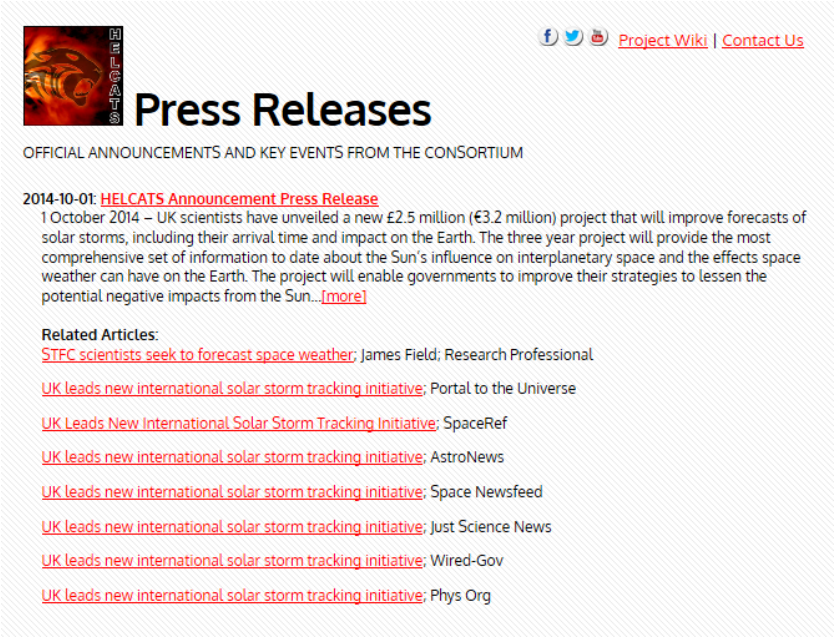
HELCATS Web Site

- New public web-site established
- Twitter, Facebook and YouTube also set-up
- Ongoing activity to update and add to new material
  - Please provide any inputs, events, presentations, news, publications etc. so that these can be added
  - Also related events and workshops for the calendar
- For internal communication have established mailing lists, newsletters and the project wiki



Press Release

- After some delays…
- Initial press release went out 1st Oct
- Picked up by a number of news feeds (see web site)



HELCATS

Project Wiki | Contact Us

Press Releases

OFFICIAL ANNOUNCEMENTS AND KEY EVENTS FROM THE CONSORTIUM

2014-10-01: HELCATS Announcement Press Release

1 October 2014 – UK scientists have unveiled a new £2.5 million (€3.2 million) project that will improve forecasts of solar storms, including their arrival time and impact on the Earth. The three year project will provide the most comprehensive set of information to date about the Sun's influence on interplanetary space and the effects space weather can have on the Earth. The project will enable governments to improve their strategies to lessen the potential negative impacts from the Sun...[more]

Related Articles:

STFC scientists seek to forecast space weather; James Field; Research Professional

UK leads new international solar storm tracking initiative; Portal to the Universe

UK Leads New International Solar Storm Tracking Initiative; SpaceRef

UK leads new international solar storm tracking initiative; AstroNews

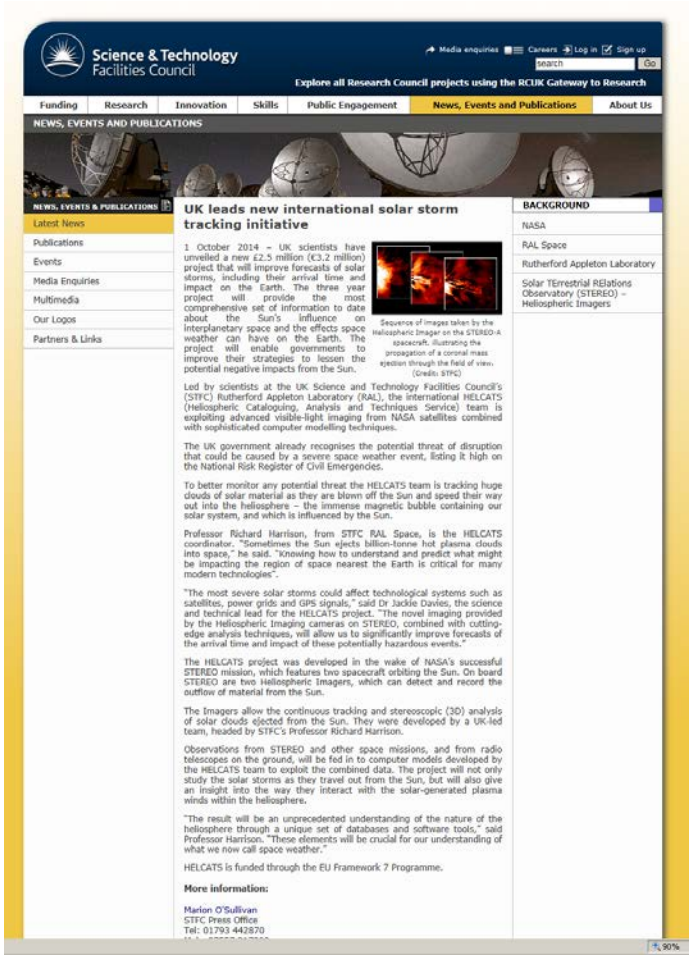
UK leads new international solar storm tracking initiative; Space Newsfeed

UK leads new international solar storm tracking initiative; Just Science News

UK leads new international solar storm tracking initiative; Wired-Gov

UK leads new international solar storm tracking initiative; Phys Org

- Richard and Jackie did interview for BBC Radio 4



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UK leads new international solar storm tracking initiative

1 October 2014 – UK scientists have unveiled a new £2.5 million (€3.2 million) project that will improve forecasts of solar storms, including their arrival time and impact on the Earth. The three year project will provide the most comprehensive set of information to date about the Sun's influence on interplanetary space and the effects space weather can have on the Earth. The project will enable governments to improve their strategies to lessen the potential negative impacts from the Sun.

Sequence of images taken by the Heliospheric Imager on the STEREO-A spacecraft, illustrating the propagation of a coronal mass ejection through the field of view. (Credit: STFC)

Led by scientists at the UK Science and Technology Facilities Council's (STFC) Rutherford Appleton Laboratory (RAL), the international HELCATS (Heliospheric Cataloguing, Analysis and Techniques Service) team is exploiting advanced visible-light imaging from NASA satellites combined with sophisticated computer modelling techniques.

The UK government already recognises the potential threat of disruption that could be caused by a severe space weather event, listing it high on the National Risk Register of Civil Emergencies.

To better monitor any potential threat the HELCATS team is tracking huge clouds of solar material as they are blown off the Sun and speed their way out into the heliosphere – the immense magnetic bubble containing our solar system, and which is influenced by the Sun.

Professor Richard Harrison, from STFC RAL Space, is the HELCATS coordinator. "Sometimes the Sun ejects billion-tonne hot plasma clouds into space," he said. "Knowing how to understand and predict what might be impacting the region of space nearest the Earth is critical for many modern technologies".

"The most severe solar storms could affect technological systems such as satellites, power grids and GPS signals," said Dr Jackie Davies, the science and technical lead for the HELCATS project. "The novel imaging provided by the Heliospheric Imaging cameras on STEREO, combined with cutting-edge analysis techniques, will allow us to significantly improve forecasts of the arrival time and impact of these potentially hazardous events."

The HELCATS project was developed in the wake of NASA's successful STEREO mission, which features two spacecraft orbiting the Sun. On board STEREO are two Heliospheric Imagers, which can detect and record the outflow of material from the Sun.

The Imagers allow the continuous tracking and stereoscopic (3D) analysis of solar clouds ejected from the Sun. They were developed by a UK-led team, headed by STFC's Professor Richard Harrison.

Observations from STEREO and other space missions, and from radio telescopes on the ground, will be fed in to computer models developed by the HELCATS team to exploit the combined data. The project will not only study the solar storms as they travel out from the Sun, but will also give an insight into the way they interact with the solar-generated plasma winds within the heliosphere.

"The result will be an unprecedented understanding of the nature of the heliosphere through a unique set of databases and software tools," said Professor Harrison. "These elements will be crucial for our understanding of what we now call space weather."

HELCATS is funded through the EU Framework 7 Programme.

More information:

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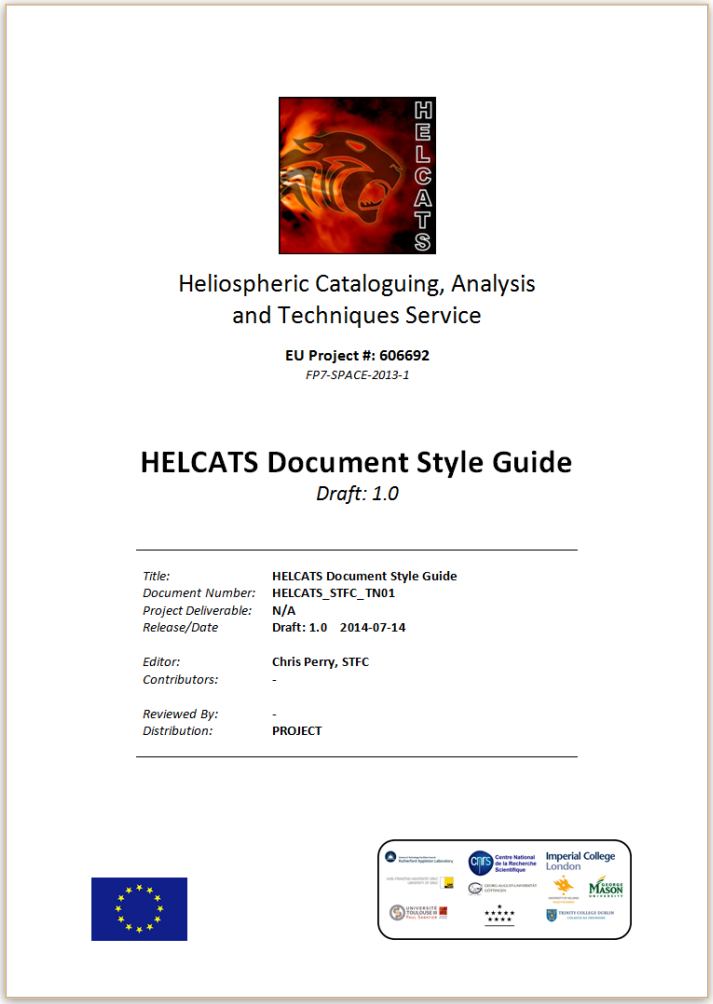
STFC Press Office
Tel: 01793 442870

BACKGROUND

NASA | RAL Space | Rutherford Appleton Laboratory | Solar TErrestrial RElations Observatory (STEREO) – Heliospheric Imagers

Document Style

- Draft release of document style
- Covers
  - Document numbering
  - File naming
  - Assignment and Tracking
  - Approval and Issue
  - Baseline Style
  - Cover page
  - Suggested document outline
- Comments welcome
- Presentation style and support media by time of the Open Meeting



Heliospheric Cataloguing, Analysis and Techniques Service

EU Project #: 606692
FP7-SPACE-2013-1

HELCATS Document Style Guide
Draft: 1.0

Title:	**HELCATS Document Style Guide**
Document Number:	**HELCATS_STFC_TN01**
Project Deliverable:	**N/A**
Release/Date	**Draft: 1.0 2014-07-14**
Editor:	**Chris Perry, STFC**
Contributors:	-
Reviewed By:	-
Distribution:	**PROJECT**

First Open Meeting

- The meetings [D8.2] will be used to disseminate the results and support further exploitation of the catalogues, modelling and techniques. The use of a workshop style format will be used to encourage dynamic use and support of the HELCATS products

- 1st Annual Open Meeting, Göttingen, 19th – 22nd May 2015
  - 19th SC Meeting, 20-21st Workshop, 22nd Wrap-up

- Pre-announcement planned to go out this month
  - Useful to discuss here…
    - Main themes, goals and structure of the meeting
    - Ensure that we are on schedule for catalogues, tools, techniques and results that we want to highlight at the meeting
    - Identify external participants that we may want to ask to give invited presentations

Catalogue Standardisation

Standardisation of the HELCATS results will simplify inter-working between work packages and interoperability with external users.

A working group will be established to reach agreement on the project standards for delivered catalogue design, feature identification, formats, naming conventions, coordinate systems, metadata, versioning scheme, QA, etc.

Where possible will make use of existing established standards, formats, practices and tools (e.g. consider use of VOTable and HELIO parameter naming and metadata descriptions).

Tools will be provided/developed for the efficient metadata collection, formatting and for catalogue access (e.g. within IDL and Matlab).

Catalogue and Data Dissemination

The master copies of the catalogues generated within WP2 to 7 will be maintained on the UKSSDC web site in the agreed format and naming convention and with the necessary metadata, documentation to support long term accessibility and use.

The most recent versions of these catalogues will also be accessible based on existing UKSSDC VO compliant services (e.g. for access by the IRAP AMDA data mining tool and external VO services).

UKSSDC will also be used to serve supporting data products such as the HI J-maps used by the IRAP AMDA data mining tool and propagation tool allowing HELCATS results to visualised within these advanced analysis tools (see next presentation).

Summary

- Good progress in a number of areas (web site, wiki, mailing lists, press release, document standards)
- Limited progress in catalogue standardisation – hence the dedicated session at this meeting.

Open Discussion on Catalogue Contents, Standards and Formats

Overview

Standardisation of the HELCATS results will simplify inter-working between work packages and interoperability with external users.

Need to reach agreement on the project standards for delivered catalogues

- Design (what each catalogue contains; manage changes)
- Formats (how the information is stored, need to be pragmatic, not a VO)
- Naming conventions (use common conventions)
- Coordinate systems (agree common set to be used in the catalogues)
- Metadata (agree what is required; collect and maintain)
- Versioning scheme (important for project flow and publication reference)
- QA (quality index, errors, review)

Where possible will make use of existing established standards, formats, practices and tools (e.g. consider use of VOTable and HELIO parameter naming and metadata descriptions).

Design

Catalogues currently being designed within each of the work-packages

1. Need to ensure that all fields required by other WP are included

2. Include information need to link the catalogues (namely a standard event ID)

3. Try to maximise compatibility with existing systems

4. Consider any requirements from data models that we may wish to be compatible with e.g. HEK and/or HELIO

HEK CME Fields

Parameter	Type	CE	Description of attribute
Event_Type	string	req	Event Type (e.g. 'FL: Flare' or 'AR: ActiveRegion')
KB_ArchivDate	string	req	Date when VOEvent entry was imported into Knowledge Base
KB_ArchivID	string	req	Unique internal ID of VOEvent entry
KB_Archivist	string	req	Name of Archivist (internal. user should leave blank)
KB_ArchivURL	string	req	URL of VOEvent entry (internal. user should leave blank)
Event_CoordSys	string	req	Coordinate system type (Choose between UTC-HGS-TOPO [Heliographics Stonyhurst]
Event_CoordUnit	string	req	Units of coordinates (e.g. "deg, deg" for UTC-HGS-TOP0)
Event_EndTime	string	req	Time when event ends (e.g. 2004-02-14T02:00:01)
Event_StartTime	string	req	Time when event starts (e.g. 2004-02-14T02:00:01)
Event_Coord1	float	req	Coordinate 1 of mean location of event
Event_Coord2	float	req	Coordinate 2 of mean location of event
Event_C1Error	float	req	Uncertainty in Coord1 of the mean location of the event.
Event_C2Error	float	req	Uncertainty in Coord2 of the mean location of the event.
FRM_Contact	string	req	Contact information of Feature Recognition Method (FRM)
FRM_DateRun	string	req	Date when Feature Recognition Method (FRM) was run (e.g. 2004-02-15T02:00:01)
FRM_HumanFlag	string	req	Whether a Human identified the event ("T" or "F")
FRM_Identifier	string	req	Username for Knowledge Base
FRM_Institute	string	req	Institute where the Feature Recognition Method (FRM) orginates
FRM_Name	string	req	Name of Feature Recognition Method (e.g. "Mark Cheung" or CACTUS")
FRM_ParamSet	string	req	Values of parameters (e.g. "threshold=0.1")
FRM_URL	string	req	URL to webpage containing information about the Feature Recognition Method
OBS_Observatory	string	req	Name of Observatory (e.g. SOHO)
OBS_ChannelID	string	req	Name of Channel of the instrument (e.g. "G band")
OBS_Instrument	string	req	Name of Instrument (e.g. "SOT")
OBS_MeanWavel	float	req	Mean wavelength (preferably in Angstroms)
OBS_WavelUnit	string	req	Unit of OBS_MeanWavel (preferably "Angstroms")
BoundBox_C1LL	float	req	Coord1 of lower-left corner of bounding box

HEK CME Fields

BoundBox_C2LL	float	req	Coord2 of lower-left corner of bounding box
BoundBox_C1UR	float	req	Coord1 of upper-right corner of bounding box
BoundBox_C2UR	float	req	Coord2 of upper-right corner of bounding box
CME_RadialLinVel	float	req	Radial Linear fit radial velocity of CME
CME_RadialLinVelUncer	float	req	Uncertainty in CME_RadialLinVel
CME_RadialLinVelMin	float	req	Mininum linear radial velocity of CME
CME_RadialLinVelMax	float	req	Maximum linear radial velocity of CME
CME_RadialLinVelStdde	float	req	Standard Deviation of radial velocity of CME
CME_RadialLinVelUnit	string	req	Units for Radial velocity of CME (e.g. 'km/s')
CME_AngularWidth	float	req	Angular width of CME
CME_AngularWidthUnit	string	req	Units for angular width of CME (e.g. 'deg')
Event_Probability	float	opt	Probability or Confidence Level that event occured (bet. 0 and 1)
Event_Importance	float	opt	Rating or importance of the event (between 0 and 1). Can be used by automated methods to denote a metric.
Event_Expires	string	opt	Useful for reporting events before they are complete (e.g. 2004-02-14T02:00:01)
Event_Coord3	float	opt	Coordinate 3 of mean location of event (optional. Suitable for use with STEREO SECCHI events)
Event_MapURL	string	opt	URL to an image/intensity map
Event_MaskURL	string	opt	URL to files which contain masks (e.g. binary masks) of region of interest.
Event_ClippedSpatial	string	opt	Whether the spatial extent of the event is wholly contained within the data set ('T' or 'F').
Event_ClippedTempora	string	opt	Whether the temporal duration of the event is wholly contained within the data set ('T' or 'F').
Event_TestFlag	string	opt	A boolean flag to indicate that the event is for testing purposes ('T' or 'F')
Event_Description	string	opt	Description of the event
FRM_VersionNumber	float	opt	Version number of automated Feature Recognition Method (Put age if Human. Just kidding. In this case put 1.0)
FRM_SpecificID	string	opt	The specific ID of this event/feature assigned by the Feature Recognition Method
OBS_Title	string	opt	Observational title
Bound_CCNsteps	long	opt	Number of steps in bounding chain code (useful for coronal hole boundaries)
Bound_CCStartC1	float	opt	Beginning Coord1 of chain code
Bound_CCStartC2	float	opt	Beginning Coord2 of chain code
Bound_ChainCode	string	opt	List of vertices for polygon (ordered list delimited by commas. e.g. 'x1, y1, x2, y2, x3, y3, x1, y1')

HEK CME Fields

ChainCodeType	string	opt	Type of chain code (Use "ordered list")
RasterScan	string	opt	Field for ascii string of raster scan
RasterScanType	string	opt	Type of raster scan (E.g. "EGSO_SFC" if you are using the EGSO Solar Feature Catalogue convection f
AR_McIntoshCls	string	opt	Active Region McIntosh class
AR_MtWilsonCls	string	opt	Active Region Mt Wilson class
AR_ZurichCls	string	opt	Active Region Zurich class
AR_PenumbraCls	string	opt	Active Region Penumbra class
AR_CompactnessCls	string	opt	Active Region Compactness class
AR_NOAAclass	string	opt	Active Regon NOAA class
AR_NOAANum	long	opt	NOAA designated Active Region Number (e.g. 10930)
AR_NumSpots	integer	opt	Number of spots in Active region
AR_Polarity	integer	opt	Polarity of Active region ('1' or '-1' for positive and negative respectively)
IntensMin	float	opt	Minimum intensity of pixels
IntensMax	float	opt	Maximum intensity of pixels
IntensMean	float	opt	Mean intensity of pixels
IntensMedian	float	opt	Mdian intensity of pixels
IntensVar	float	opt	Variance of intensity of pixels
IntensSkew	float	opt	Skewness of intensity of pixels
IntensKurt	float	opt	Kurtosis of intensity of pixels
IntensTotal	float	opt	Sum of intensities of pixels
IntensUnit	string	opt	Units of intensity
CME_Accel	float	opt	Acceleration of CME
CME_AccelUncert	float	opt	Uncertainty of CME acceleration
CME_AccelUnit	string	opt	Units for CME acceleration (e.g. 'km/s/s')
CME_Mass	float	opt	Mass contained in CME (e.g. '1e17')
CME_MassUncert	float	opt	Uncertainty in mass contained in cme
CME_MassUnit	string	opt	Units for CME mass (e.g. 'g')
Area_AtDiskCenter	float	opt	Area of event at disk center

HEK CME Fields

Area_AtDiskCenter	float	opt	Area of event at disk center
Area_AtDiskCenterUnc	float	opt	Uncertainty of area at disk center
Area_Raw	float	opt	Area of event in sky plane
Area_Uncert	float	opt	Uncertainty of area in sky plane
Area_Unit	string	opt	Units of area in sky plane (e.g. 'arcsec2')
Event_Npixels	long	opt	Number of pixels pertaining to event
Event_PixelUnit	string	opt	Units of values given in pixels
OBS_DataPrepURL	string	opt	URL pointing to information about how data was reduced
OBS_FirstProcessingDa	string	opt	Earliest date of all images considered part of the event
OBS_LastProcessingDa	string	opt	Latest date of all images considered part of the event
OBS_LevelNum	float	opt	Level of Data (e.g. 1.5) = LVL_NUM
OBS_IncludesNRT	string	opt	"T" if any image in the event has the NRT flag (bit 30 in QUALITY), "F" otherwise

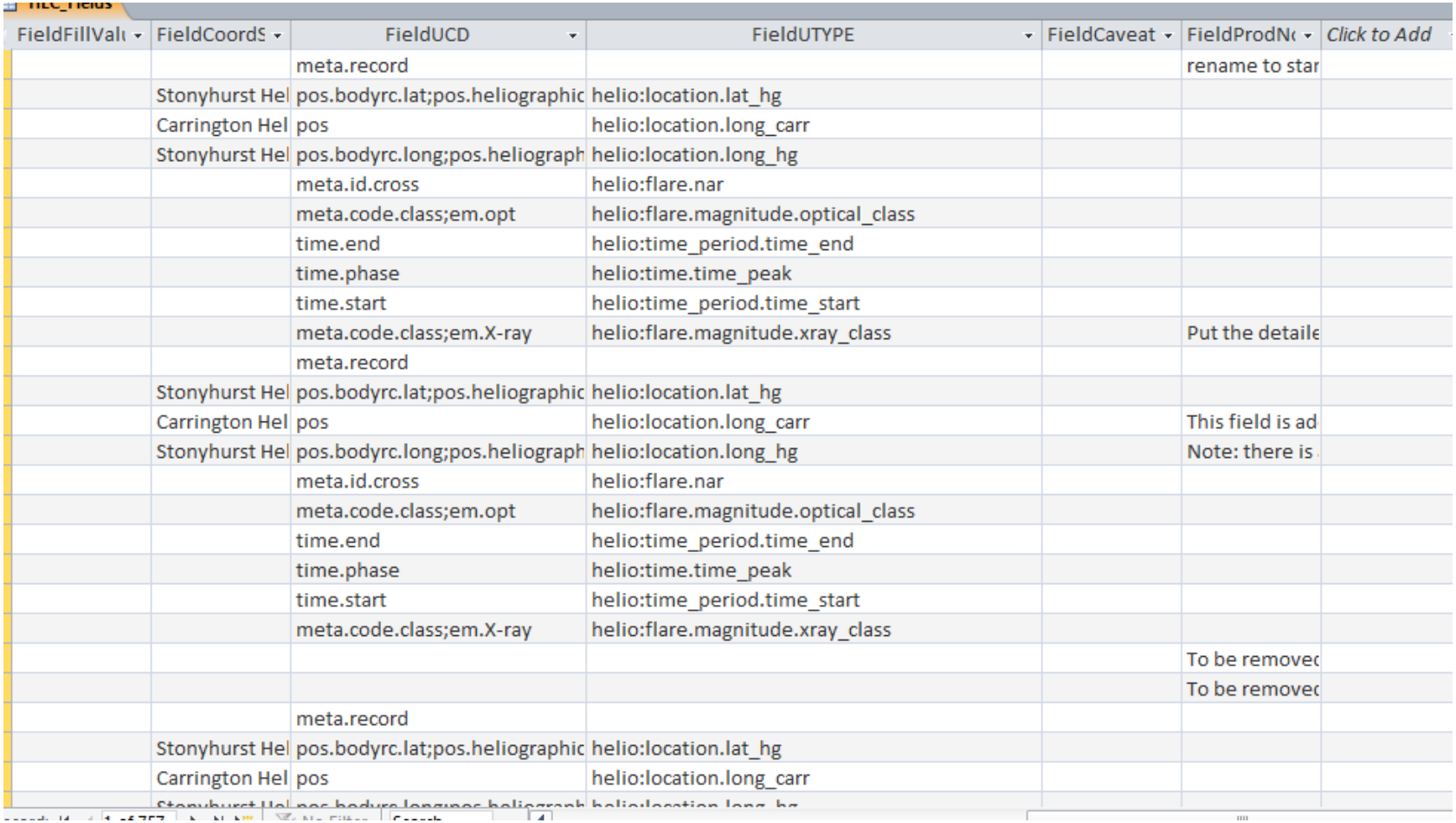
- Not all fields required
- Some information is the same for all records so does can be held externally

HELIO Data Model

HELIO Data Model

eldI	ListD	ColN	FieldNam	OldFieldI	FieldDesc	FieldDat	Field	FieldEntity	FieldProper	FieldUnits	FieldSIConv
5	1	1	HEC_id	goes_id	Event identification number (I	Integer	Private	Index	Catalogue	HEC id	1>Unitless
12	1	6	lat_hg	latitude	Heliographic latitude of event	Real		Position	Latitude	degrees	1.0>degrees
14	1	8	long_carr	long_carr	Carrington longitude of active	Real		Position	Longitude	degrees	1.0>degrees
13	1	7	long_hg	longitude	Stonyhurst longitude of active	Real		Position	Longitude	degrees	1.0>degrees
11	1	5	nar	nar	NOAA active region index	Integer		Index	Catalogue	NAR #	1>Unitless
16	1	10	optical_class	optical_clas	Average optical importance of	Special - Oc		Photon	Optical Class	Optical class	
9	1	4	time_end	time_end	End time of flare	ISO8601 Tim		Time	End	UT	1.0>UT
8	1	3	time_peak	time_peak	Peak time of flare	ISO8601 Tim		Time	Peak	UT	1.0>UT
7	1	2	time_start	time_start	Start time of flare	ISO8601 Tim		Time	Start	UT	1.0>UT
15	1	9	xray_class	xray_class	Importance of flare at X-ray w	Special - Xcl		Photon	X-ray Class	X-ray class	1.0>(Wm^-2 *10^[C=-6,M=-5,X=-4])
18	2	1	HEC_id	ha_id	Event identification number (I	Integer	Private	Index	Catalogue	HEC id	1>Unitless
24	2	6	lat_hg	latitude	Average heliographic latitude	Real		Position	Latitude	degrees	1.0>degrees
26	2	8	long_carr	long_carr	Carrington longitude of the fla	Real		Position	Longitude	degrees	1.0>degrees
25	2	7	long_hg	longitude	Average heliographic longitud	Real		Position	Longitude	degrees	1.0>degrees
23	2	5	nar	nar	NOAA active region index	Integer		Index	Catalogue	NAR #	1>Unitless
28	2	10	optical_class	optical_clas	Average optical importance of	Special - Oc		Photon	Optical Class	Optical class	
22	2	4	time_end	time_end	Average of flare end times	ISO8601 Tim		Time	End	UT	1.0>UT
21	2	3	time_peak	time_peak	Earliest Universal Time within	ISO8601 Tim		Time	Peak	UT	1.0>UT
20	2	2	time_start	time_start	Earliest Universal Time of flare	ISO8601 Tim		Time	Start	UT	1.0>UT
27	2	9	xray_class	xray_class	Importance of flare at X-ray w	Special - Xcl		Photon	X-ray Class	X-ray class	1.0>(Wm^-2 *10^[C=-6,M=-5,X=-4])
30	3	2	#	ntime_start	Adjusted start time of the eve	ISO8601 Tim		Time	Start	UT	1.0>UT
34	3	6	#	ntime_end	Adjusted end time of the ever	ISO8601 Tim		Time	End	UT	1.0>UT
29	3	1	HEC_id	sgs_id	Event identification number (I	Integer	Private	Index	Catalogue	HEC id	1>Unitless
36	3	8	lat_hg	latitude	Heliographic latitude of the ac	Real		Position	Latitude	degrees	1.0>degrees
38	3	10	long_carr	long_carr	Carrington longitude of active	Real		Position	Longitude	degrees	1.0>degrees
37	3	9	long_hg	longitude	Stonyhurst longitude of active	Real		Position	Longitude	degrees	1.0>degrees

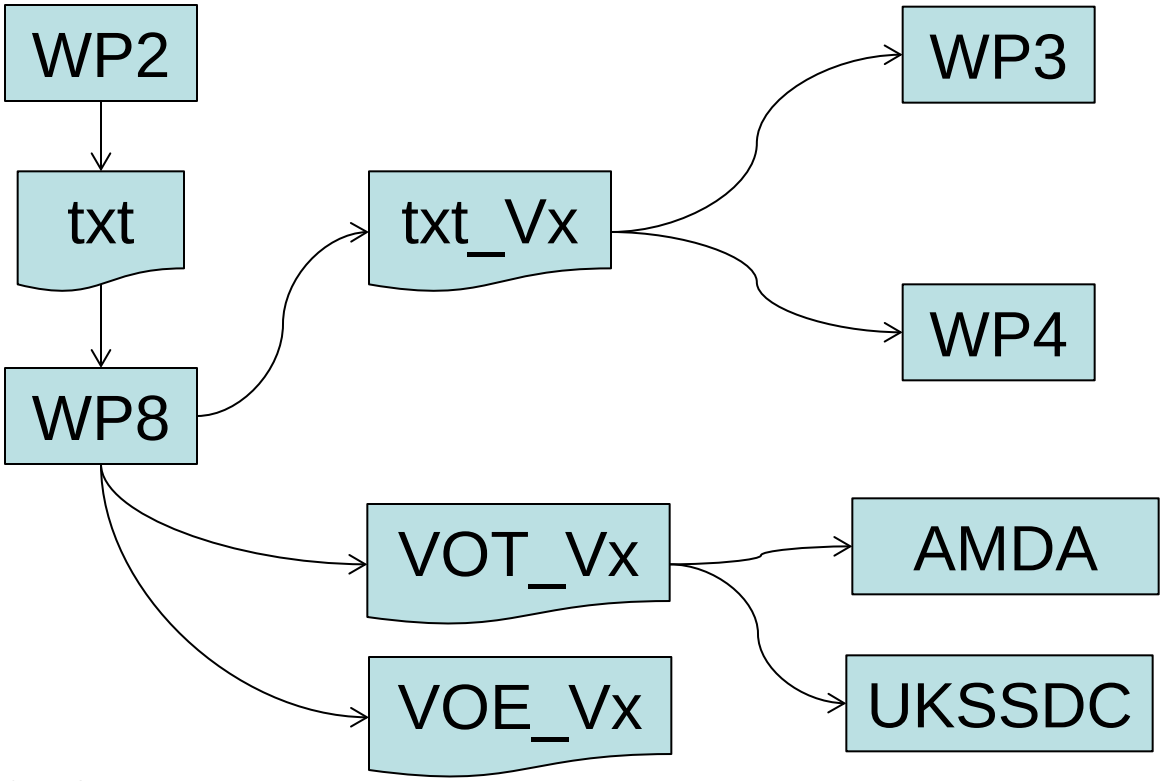
HELIO Data Model



FieldFillVali	FieldCoordS	FieldUCD	FieldUTYPE	FieldCaveat	FieldProdN	Click to Add
		meta.record			rename to star	
	Stonyhurst Hel	pos.bodyrc.lat;pos.heliographic	helio:location.lat_hg			
	Carrington Hel	pos	helio:location.long_carr			
	Stonyhurst Hel	pos.bodyrc.long;pos.heliograph	helio:location.long_hg			
		meta.id.cross	helio:flare.nar			
		meta.code.class;em.opt	helio:flare.magnitude.optical_class			
		time.end	helio:time_period.time_end			
		time.phase	helio:time.time_peak			
		time.start	helio:time_period.time_start			
		meta.code.class;em.X-ray	helio:flare.magnitude.xray_class		Put the detaile	
		meta.record				
	Stonyhurst Hel	pos.bodyrc.lat;pos.heliographic	helio:location.lat_hg			
	Carrington Hel	pos	helio:location.long_carr		This field is ad	
	Stonyhurst Hel	pos.bodyrc.long;pos.heliograph	helio:location.long_hg		Note: there is	
		meta.id.cross	helio:flare.nar			
		meta.code.class;em.opt	helio:flare.magnitude.optical_class			
		time.end	helio:time_period.time_end			
		time.phase	helio:time.time_peak			
		time.start	helio:time_period.time_start			
		meta.code.class;em.X-ray	helio:flare.magnitude.xray_class			
					To be removed	
					To be removed	
		meta.record				
	Stonyhurst Hel	pos.bodyrc.lat;pos.heliographic	helio:location.lat_hg			
	Carrington Hel	pos	helio:location.long_carr			

Formats

- Most WPs currently using space separated tabular data files
- For broader dissemination would want to consider export to more self describing format (e.g. VOTable, VOEvent XML formats)
- Possible scheme (including version control) for WP2 output (similar scheme for other WP)



Formats/Metadata etc

- If using simple txt file then agree standard formats and rules to be followed:
  - Standard way to describe field names, units and other metadata
  - Time: Use CSSDS/ISO8601 YYYY-MM-DDTHH:MM:SSZ
  - Angles specified in degrees
  - Speeds in km/s
  - Coordinate systems HEEQ plus Carrington Longitude
  - Format for event identifier
    - HCME_A__20070415_01 (cat name __ yyyymmdd _ seq)
  - Filename should include the cat name and version
  - Fill values should be the same data type as the field
  - Annotations should be as separate field
  - Avoid complex fields containing multiple bits of information

Version Control / QA

- Configuration control and versioning important
  - Catalogues are being updated (multiple versions already in use)
  - When it comes to publications need to be able to refer to a particular version of the catalogues that have been used
- File names should include version number
- Need to agree an approval and release strategy for making the catalogues publicly available.
  - Require SC approval?

Examples

- WP 2
- WP 3
- WP 4
- WP 5
- WP 6
- WP 7