SOHO SCIENCE REPORT No. 8
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Contents

1. Planned SOHO Science Working Team (SWT) activities

Date	Event	Location	Contact
1995			
January 23-25	SWT–13	ESTEC	V. Domingo (ESTEC)
April 7-8	VIRGO Science Team meeting	Stanford	C. Fröhlich
May 3-5	UVCS Science Team meeting	SAO	J. Kohl (SAO)
September 11	Launch party	KSFC	V. Domingo or A. Poland

2. Announced SOHO science related conferences

Date	Event	Location	Contact
1995			
April 3-6	4th SOHO Workshop Helioseismology	Pacific Grove, CA	thoeksema@solar.stanford.edu
April 3-7	EGS XX Solar-Terrestrial Physics + Solar and Heliospheric Physics	Hamburg, Germany	R.A. Harrison (RAL) rharrison@solar.stanford.edu B.Foing & R.Marsden (ESTEC)
April 3-7	AGU Chapman Conference: Measurement Techniques for Space Plasmas: What Works and What Doesn't	Santa Fe, NM	J.Borovsky or R.F.Pfaff jborovsky@lanl.gov u6rfp@lepvax.gsfc.nasa.gov
May 23-27	IAU Colloq. 153 Magnetodynamic Phenomena in the Solar Atmosphere	Makuhari, Japan (near Tokyo)	Takeo Kosugi (NAOJ) tkosugi@solar.stanford.edu Fax: (+81)-422-34-3742
May 29 - Jun. 2	11th Colloq. on UV and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas	Nagoya, Japan	K. Jamashita or T. Watanabe yamashita@satio.phys.nagoya-u.ac.jp watanabe@uvlab.mtk.nao.ac.jp
June 25-30	Solar Wind 8	Dana Point Resort, CA	DMcComas@solar.stanford.edu
July 9-14	X-Ray and Ultraviolet Spectroscopy and Polarimetry II (SPIE's 1995 Int. Symp.)	San Diego, CA	S. Fineschi sfineschi@solar.stanford.edu

3. Status of the Project

1. Technical and Programmatic

In June 1994 the Flight Model (FM) of the Payload Module (PLM) has undergone successfully its System Functional Test (SFT), with all FMs of the experiments working together. After this test and during July the PLM has concluded its activities at Matra Marconi Space (MMS-UK) in Portsmouth and at the beginning of August was shipped to MMS-F in Toulouse. During August further integration activities (UVCS, CELIAS, PDUs) have taken place.
The FM of the Service Module (SVM) also completed its test and received some reworked units and the EQM of the Solid State Recorder, after its specific successful qualification. The intended configuration for Thermal Balance/Thermal Vacuum (TB/TV) test at spacecraft level will be one Solid State Recorder and one Tape Recorder.
Mating of the two halves of the FM spacecraft took place for the first time on September 3 and was followed by the first planned and successful System Functional Test (SFT) of the whole FM spacecraft. In the last week of September the spacecraft, again demated, was undergoing further experiment modification activities and preparation for the first (SVM only) TB/TV test.
An addendum to the Qualification Review took place in July and highlighted unsolved worries on the functionality of the solar array. A plan of action has been discussed and started with the relevant contractor.
The Assembly-Integration-Verification (AIV) activities are now proceeding at MMS-F on double shift and Saturday work to keep the tight schedule leading to an end of April termination of the activities in Europe.

2. Ground Segment

The first ground segment compatibility test with NASA's ground system took place as planned in June with success. The lessons learned and some delays exposed in this exercise are being used to control and plan the ongoing activities in the preparation of the SOHO operations.

3. Launcher

In June a Mission Peculiar Critical Design Review (M-CDR) of the SOHO launcher (AC-117) took place at Martin Marietta, San Diego.
Martin Marietta successfully launched another Atlas II AS (the same version as SOHO's) on October 6, 1994.
Discussions are ongoing on the revised vibration levels required by the launcher.

4. Experiments

The status of recovery actions for UVCS, EIT and CELIAS was the subject of a review by Director of Science (D/SCI) mid-September.
UVCS, which suffered some problems in June-July, has recently demonstrated a marked improvement according to the revised recovery schedule. The instrument's Spectrometer Assembly has been in Alenia-Turin since July and is receiving the new Cross Delay Line (XDL) detectors on schedule. The Mirror Occulter Mechanism is being reworked at GSFC; the FM instrument, with some temporary dummies, will undergo system tests up to December and will then be retro-fitted with all its flight elements.
The progress of EIT integration and test activity is excellent.
A specific worry on the timely delivery of the flight Solid State Detectors of one of the sensors of CELIAS is being closely monitored, but will not affect the schedule for the TB/TV test (Dec 94). After a status meeting on 15 November it seems that the Solid State Detector production problems are solved.
Other instruments have been having some finishing touches to their sensors, elements which showed problems changed, or changes in software are being made. During thermal balance/thermal vacuum tests a fully representative payload will be present, after the latest upgrades and changes in Oct/Nov.

5. Science Operations

A first SOHO Science Operations Simulation was successfully held at the Experiment Operations Facility (EOF) at GSFC on 15-17 November. The main purposes were a) to train the scientific groups involved in mission operations and b) to verify the development and readiness status of the overall science operations systems including sending commands, receiving telemetry, planning and implementing mission science. The support of the Experimenter Teams has been excellent and the simulation has proven to be an extremely valuable exercise for each of us (experimenters, Ground System personnel, and Project Office) to get acquainted with the facilities and to detect otherwise unforseeable defects in the planned operations.

6. SOHO Data Archive in Europe

Following ESA's request to the European SOHO science community to submit proposals for building and maintaining a SOHO data archive in Europe, three European institutions have responded:

1. Rutherford Appleton Laboratory, Chilton (UK)
2. Universita di Torino (I)
3. Institut d'Astrophysique Spatiale, Orsay, with CNES, Toulouse (F)

At this stage of the ongoing assessment of the proposals it appears that the three institutions will in principle be able to provide the archive. ESA is discussing with them details of the implementation in order to ensure that the requirements set by the SOHO Science Working Team are fulfilled. It is expected that an implementation plan will be completed by January 1995.

6. Launch date

ESA and NASA have mutually agreed to shift the SOHO launch date from the announced July 27 date to 11 September 1995.

4. SOHO related bibliography (IV)

The references given below continue a list of SOHO related publications which was started in SOHO Science Report No. 5. The list is based on the IRS database of ESRIN/ESA as well as on references and pre-/reprints sent to us. If you are aware of publications which you think should appear here, please send us references, abstracts or pre-/reprints. A LaTeX file containing the complete list of SOHO related publications can be obtained on request from bfleck@soho.estec.esa.nl.

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In Memoriam
Philippe Delache
1927-1994

October 13 we have been shocked by the unexpected and untimely death of Philippe Delache. He was not merely another CoI interested in the science of VIRGO: indeed, it was his initiative to add the helioseismology to the scientific objectives of the potential ESA space mission DISCO (Dual Irradiance and Solar Constant Observations) during its assessment study in 1981. The objective of DISCO was to measure total and spectral irradiance of the Sun from the far UV to the near IR. Because of the continuity needed for the solar oscillation studies, a halo orbit around $L1$ was proposed. The helioseismological payload comprised sunphotometers similar to those of VIRGO and a high resolution spectrometer for velocity measurements similar to GOLF. When in December 1982 DISCO was not selected as a mission, the helioseismology instruments, the total solar irradiance and the *in situ* solar-wind measurements were taken over by a new solar mission just starting an assessment study. The Solar High-resolution Observatory (SOHO) for the study of the corona then became the Solar and Heliospheric Observatory. Owing to the much better pointing characteristics of SOHO, it was possible to augment the original DISCO helioseismological payload with a high-resolution instrument. Thus, it is as a consequence of Philippe's early initiative that a powerful and sophisticated helioseismological payload on the ESA/NASA mission SOHO is now becoming a reality. To honour this and his continuous contributions to the field of helioseismology and solar variability we dedicate VIRGO to the memory of Philippe Delache.

Claus Fröhlich and the VIRGO team