Minutes of the 10th SOHO SWT Meeting

IAS, Orsay

7–9 July 1993

Contents

1 Agree agenda and actions revision

Action 9.1 on PI's: Status: closed (for GOLF, VIRGO, SOI, CDS, ERNE)
to comment before April 1^{st} 1993 on the SOHO SOP issue 1.0.

Action 9.2 on Particle Experimenters: Status: closed (for CELIAS)
to comment before April 1^{st} 1993 on the ISTP key parameters they need.

Action 9.3 on PS: Status: closed
to write before April 1^{st} 1993 a new draft of the Guest Investigator proposal.

Action 9.4 on PI's: Status: closed (for GOLF, VIRGO, SUMER, CDS, UVCS)
to document before April 1^{st} 1993 their views on data rights, similar as done by Harrison for CDS.

Action 9.5 on GOLF, LASCO, SUMER and VIRGO: Status: closed (for VIRGO and SUMER)
to report before May 1^{st} 1993 of the results of the solar flare test. Input to T. Appourchaux.

Action 9.6 on T. Appourchaux: Status: closed for VIRGO and MDI (see Annex 4)
to report and compile before next SWT the results of the solar flare test. Distribution to the PI's.

2 Data rights and obligations

V. Domingo distributed a handout on "Use of SOHO data" (see annex 5) which served as basis for discussion. No general agreement was reached among the PI's as regards the time after which the data should be open to public access. An action item was put on the PI's to comment before 1 October 1993 on this document (see annex 5; action 10.1) and to provide input for table 1 of this document, including a definition of level 1 and level 2 of their data, also before 1 October 1993 (action 10.2).

A. Poland gave a report on an EOF/CDHF splinter meeting on data distribution (see annex 6). It followed a discussion whether level 0 or level 1 data should be distributed to the experimenter teams. It was agreed to distribute level 0 data only. Further, it was agreed to publish the summary data on CD-ROMs and make them available to the broad community. A. Title suggested that these CD-ROMs should include a small (presumably IDL-) package to ease access and display of the various images in the summary data file. Everybody agreed.

A. Poland raised the question whether the summary images should be stored at the EOF, the CDHF or on individual PI workstations. It was agreed that the summary images should be stored on a central facility, i.e. *not* on the PI's workstations. There is an action item from the 9th SOWG meeting on J. Gurman and Ch. St.Cyr (SOWG action 9.2) to consider wether to send the summary data files to the CDHF or to send only a catalog.

3 Guest Investigators programme

V. Domingo distributed a draft proposal of a SOHO Guest Investigators programme (see annex 7). Then there was a lively discussion on the GI programme. *The* main problem of a GI programme is the funding, in particular the funding in the US. According to A. Title a GI programme without funding would make no sense. Another problem constitutes the different funding system in the US and Europe. Some people are worried that the Europeans could be given preference in the selection procedure simply for financial and not for scientific reasons. Then the question was raised what would happen if a PI wanted to refuse a GI simply because he wanted to take over his clever ideas? Who has the "final" word? This issue has to be sorted out. C. Fröhlich asked who will appoint the members of a PI team. It was agreed that it should be the PI himself; thus, his "private" (informal) GI's will have the same rights as regular Co-I's.

An action was put on the PS to write a first draft of an AO for a GI programme before 1 December 1993 (action 10.3). An action was put on the PI's to comment on the GI programme in annex 7 (action 10.1).

4 Campaign organization

V. Domingo distributed a draft on "Soho observation campaigns" (see annex 8). After a brief discussion an action was put on the PS to work out a structure of campaign organization before 1 December 1993 (action 10.4).

5 Publications

It was agreed to have a small SOHO booklet distributed at the Elba workshop. An action was put on the PI's to provide an updated description of their instrument for this booklet before end of August (action 10.5). The contributions to the Annapolis workshop can be taken as input. VIRGO, GOLF, EIT, and SWAN have to provide new descriptions as these instruments are not described appropriately (or not at all) in the Annapolis proceedings.

Further, it was agreed to have a new "green booklet" (i.e. a new version of ESA SP-1104), similar as done for Cluster (ESA SP-1159: Cluster: mission, payload and supporting activities). This can be done together with the combined publication in Solar Physics planned for late 94. Papers should be at ESTEC early 1994.

6 Engineering review

a) Status of the project (F. Felici)

see handout — annex 9

- B. Gardini hast left SOHO; replaced by F. Vandenbussche as spacecraft manager.
- SM finished (experiments should be checked if they were damaged by acoustic and vibration tests)
- PLM engineering model: SFT to be finished by 9 July 1993
- MCDRs (Spacecraft CDR, Payload CDR and Ground Segment CDR) to take place in the near future
- Comment by K. Wilhelm that the sun-shield of SUMER is still missing in the interface drawings in EID-A. An action was put on the Project to include it there (action 10.6).

b) Spacecraft status (F.C. Vandenbussche)

see handout — annex 10

- EM: all models delivered to Matra + integrated
- FM PLM: structure will be ready early September 93
- FM SVM: ready October 93

- FM subsystems: ready August – November 93
- Critical areas:
  - tape recorder problems at low temperature and low bit rates still not solved (mainly a problem for Cluster); ESA is studying alternatives (solid state memory)
  - replacement of two FM components may have an impact on the schedule
  - power supply subsytem on critical path

c) Payload development status (C. Berner)

see handout — annex 11

- Helmut Schweizer replaced Yves Constantin as SOHO AIV engineer
- experiment delivery slot: 1. November 93 — end of January 94
- critical areas:
  - delivery of template to CVZ (31 July 93)
  - closure of main NCR's raised on EM
  - provide FM alignment offset data (16 July 93)
  - provide FM database update (end of July)
  - provide EMC test inputs (15 August 93)

d) Cleanliness (R. Thomas)

see handout — annex 12

7 Status of experiments

see hardcopies — annex 13

1. **GOLF** (A. Gabriel)
   no change in performance specifications; all subsystems have been shown to be functional; QM foot failure (needs more strengthening); power supply unit problems (filtering connectors not reliable) ⇒ delivery delay of 6 weeks (15.8.→30.9.); schedule delay under evaluation.
2. **VIRGO** (C. Fröhlich)
   same power supply unit problems as GOLF (CRISA); delivery date of FM 29 Nov. – 3 Dec. 93; FS ready 1 March 94.
3. **SOI/MDI** (A. Title)
   field tests presented; no schedule problems at the moment; delivery date 11 Nov. 93.
4. **SUMER** (K. Wilhelm)
   SM + EM delivered; new project manager: E. Keppler (MPAe); *the* problem are the MAMA detectors; solved problems: vibration, alignment, EMC; other problem: mirror performance (2" instead of 1" resolution only), although the mirror was shaped to 0.6" (this means that the mirror definitely has changed); A. Title commented that it is well known that SiC mirrors are not stable.

5. **CDS** (E. Sawyer)
new CDS blue book issued (vers. 5); FM hardware manufacture 90% complete; telescope manufacture complete, assembly started; spectra presented; areas of concern: schedule (adequate time for test and calibration?) + availability of instrument for re-calibration after AIV.
6. **EIT** (J.-P. Delaboudiniere)
still problems with the mirror mounting; only 75% of the filters survive tests; never seen a completely assembled instrument(!); include shield to bring CCD temperature close to -80°C; add extra filter to reach a stray light level $< 10^{-12}$; problems with the schedule (no time for calibration!) $\rightarrow \approx$ 1 month delay.
7. **UVCS** (K. Kohl)
The problem are the MAMA detectors; no detectors available yet(!); very severe schedule problems.
8. **LASCO** (D. Michels)
no major concerns, only some minor motor anomalies; straylight level of C1 two orders of magnitude better then specified; no descoping of science objectives; well in schedule, but no contingency; delivery date: end of November 93.
9. **SWAN** (J.-L. Bertaux)
High voltage power supply broke again during vibration tests; mirror head mechanism stuck again in cold vacuum ($\Rightarrow$ redesign necessary for HVPS, ball-bearings and head); it is planned to order new 2-point ball-bearings; severe schedule problems.
10. **CELIAS** (A. Bürgi)
new CAMEX production necessary for STOF ($\Rightarrow$ delay of 3 months); sink temperature of SSD radiator still too high; delivery dates: mid of November for CTOF, MTOF and DPU; Januar 94 for STOF; FM2 October 94; swap of detectors FM1$\leftrightarrow$FM2 8 months before launch.
11. **COSTEP** (H. Kunow)
problems with the Si(Li) detectors from LBL; delivery date: 15 December 1993.
12. **ERNE** (J. Torsti)
well in schedule, no major concerns; ESU integration starts 30 July; most serious problem at the moment is a software problem at high particle fluxes; delivery date: 11 Nov. 93; FS: May 94.

8 Tour to the EUV calibration facilities at IAS

9 SOHO Intercalibration Committee report

SIC minutes — see annex 14

J. Kohl gave a report of the SOHO Intercalibration Committee (SIC) meeting which took place Wednesday morning (7 July, 9:00–12:00). There are two action items on the PI's from this meeting:

Action SIC-10.1: Each instrument representative is to provide a specific program for in-flight intercalibration (in particular address: radiometric calibration, wavelength scale, alignment and pointing, stray light, point spread function). Also provide ideas for how intercalibration relates to solar models used for intercomparison. (by next SWT)

Action SIC-10.2: Each instrument representative to provide plans for absolute radiometry with his/her instrument (by 1 September 1993 to V. Domingo).

10 Yohkoh science report

L. Culhane (Mullard Space Science Laboratory) gave a very interesting science talk on latest results from the Yohkoh mission.

11 Science operations report

see annex 15

a) Report of the SOWG meeting

L. Sanchez gave a report of the last SOWG meeting held at Goddard 15–16 July 1993 (see annex 15).

b) EOF

A. Poland presented the EOF network architecture (see annex 15) and addressed the space problem caused by the planned splitting of the EOF. At the moment it is intended to have the EOF in Bldg. 3 and the analysis facility in Bldg. 26. There is an action item from SOWG 9 on the PI's to comment on the impact of the EOF space allocation changes on their operation plans, and to define the worst case of space allocation needs and data traffic at the EOF. A. Poland once more stressed the importance of having an European center for quick data access at the EOF, i.e. have a high speed link from Europe to Goddard and not go through NSI.

c) ESDOC

After reviewing the history of the ESDOC selection M. Huber announced that ESDOC has officially been abandoned by ESA since not all PI's assured their assistance for an ESDOC at IAC, Tenerife. There are plans of the French and Italian proposers to have an operations and data analysis facility at IAS during the operational phase of SOHO, and a data analysis facility including a long-term SOHO archive at Rome in a later phase (see SWT executive meeting [section 13.2] and annex 16).

d) Status of the SOP

A new issue 1.1 of the SOP has been released early June. There will be a new issue 2.0 released late this year in which all TBD's should be replaced by information, all tables should be updated and the annexes should be completed, the overall data rights policy should be clearly defined, and the GI programme as well as the structure of campaign organizations should be incorporated. Input from the PI's is needed (see action items 10.1, 10.2 and 10.7)!

e) Coordination with ground-based observatories

V. Domingo presented a table of ground-based observatories (see annex 15). There is an action item on the PI's to evaluate this survey of ground-based observatories and send detailed requirements on synoptic data to the PS before 1 October 1993 (action 10.7).
A. Title made a comment, warning that having too many data available could be counter-productive ("the larger the volume the lesser it is used"). He emphasized the importance of a detailed management plan to avoid overloading people. Further, he commented that it is absolutely mandatory for a meaningful use of synoptic data at the EOF that all the images have the same orientation, and that software is available with which one can easily extract exact coordinates simply by means of a cursor, irrespective of the exact image scale or the observatory where the image has been taken. L. Culhane mentioned that, as regards the Yohkoh mission, ground-based data were mostly used in conjunction with dedicated campaigns.

12 SPWG report

On Wednesday afternoon a SPWG meeting took place. One of the topics was the organization of the 3rd SOHO workshop to be hosted by SEL in Boulder 3–7 October 1994. As members of the Scientific Organizing Committee were suggested: V. Domingo, M. Dryer, J.Gosling, R. Harrison, E. Hildner, R. Howard, M. Kallenrode, E. Marsch, R. Marsden, A. Poland, R. Schmidt.

Another topic was the organization of the 3rd IACG campaign workshop (in preparation for the 3rd IACG campaign on "Solar events and their manifestation in Geospace" to take place late 96). The workshop is scheduled for 31 May – 3 June 1994 in Tokyo. Main topics are: 1.) Solar corona disturbances, 2.) Propagation in the solar wind, and 3.) Manifestation in Geospace. Up to now, members of the organizing committee are R. Harrison, D. Baker and R. Schwenn.

Then there was the question how to proceed with this working group. It was decided that, at the next SWT, a masterplan of scientific priorities should be worked out, including an emergency plan for the first 4 weeks. This meeting will be organized by A. Gabriel (chairman), J. Gurman and E. Antonucci to be co-chairs.

13 Science Working Team executive meeting

13.1 Action items SWT 10

Action 9.5 on GOLF and LASCO to report before 1 October 1993 of the results of the solar flare test. Input to T. Appourchaux.

Action 10.1 on PI's: to comment before 1 October 1993 on drafts of data rights (annex 5), GI programme (annex 7), and campaign organization (annex 8). Input to PS.

Action 10.2 on PI's: to provide input for table 1 in data rights document (annex 5), including a definition of level 1 and level 2 of their data (before 1 October 1993).

Action 10.3 on PS: to write an AO for a GI programme before 1 December 1993.

Action 10.4 on PS: to work out a structure of campaign organization before 1 December 1993.

Action 10.5 on PI's: (at least VIRGO, GOLF, EIT, and SWAN) to provide an updated instrument description for the SOHO booklet to be distributed at the Elba workshop. Input to PS before end of August.

Action 10.6 on Project: to include the sun-shield of SUMER in the interface drawings in EID-A.

Action 10.7 on PI's: to evaluate the survey of ground-based observatories (annex 15) and send detailed requirements on synoptic data to PS before 1 October 1993.

13.2 Wrap-up discussion

A. Gabriel presented the unsolicited French/Italian proposal for an European operations and data analysis center (see Annex 16). It is planned to have an operations and data analysis center with a short-term archive at IAS Orsay during the operational phase of SOHO, and a data analysis facility with a long-term, definite SOHO archive at Rome after the operational phase. These centers would not carry the flag of ESA. However, ESA support is needed during the implementation of these facilities, for instance when negotiating with NASA for dedicated communication lines.

After a short discussion on the importance of an appropriate instrument calibration the following statement worked out by the SIC was unanimously agreed:

> "The quality of the scientific achievements of the SOHO mission will be linked directly to the knowledge of instrument characteristics gained through laboratory characterization. It is vitally important that all instruments be appropriately characterized. This is best achieved through a detailed laboratory characterization before spacecraft AIV and, in some cases, a recalibration within one year of launch."

V. Domingo addressed the problem of the MAMA detectors which were to be developed by Ball Aerospace. This problem has become a real critical one and seriously jeopardizes two experiments (SUMER and UVCS). There are plans to set up a steering committee to review the situation, L. Culhane to be chairman.

H. Kunow reported on problems with the houskeeping data during SFT at Portsmouth. The housekeeping data are of very poor quality and pop up only for a few seconds on a display. He suggested that these data should be available in computer readable form in a database like structure. A file at the end of the test would be sufficient. Other PI's fully agreed.

Next SWT:

The next SWT meeeting will take place at ESTEC 25-27 January 1994. On the first day, there will be a SPWG meeting where a masterplan of scientific operations for the nominal mission duration will be worked out (including an emergency plan assuming SOHO would be operational only for 4 weeks). This session will be organized by A. Gabriel (chairman), J. Gurman and E. Antonucci being co-chairs.