

SPIRE-ESA-MOM-001269

From: Daniel.de.Chambure@esa.int
Sent: 02 May 2002 12:01
To: Gerald.Crone@esa.int; 'A.G.Richards@rl.ac.uk'; 'C.K.Wafelbakker@sron.nl'; 'ngeis@mpe.mpg.de'; SAFA, Frederic; c.k.wafelbakker@sron.nl; k.j.wildeman@sron.rug.nl; k.j.king@rl.ac.uk; b.m.swinyard@rl.ac.uk; bw@mssl.ucl.ac.uk; ohb@mpe.mpg.de; schubert@mpe.mpg.de; rok@mpe-garching.mpg.de; kD@kayser-threde.de; ngeis@mpe.mpg.de; jean-michel.reix@space.alcatel.fr; pascal.rideau@space.alcatel.fr; Jean-Jacques_Juillet@vzmta01.netfr.alcatel.fr; Edgar.Hoelzle@dss.dornier.dasa.de; Wolfgang.Ruehe@dss.dornier.dasa.de; Philippe.p.Martin@space.alcatel.fr; Jacqueline Fischer; TOULEMONT, Yves; Kjetil Dohlen; Richards, AG (Tony) ; Göran Pilbratt; nick@sron.rug.nl; D.A.Beintema@sron.rug.nl; Dominic.Doyle@esa.int; Volker.Kirschner@esa.int; Hartmann, Hans ED172; Hoelzle, Edgar ED171; Frey, Albrecht ED172; Long, JA (Judy) ; ARNOUX, Jean-Jacques
Cc: Thomas.Passvogel@esa.int; Daniel.de.Chambure@esa.int; 'Philippe.P.Martin@space.alcatel.fr'; TOULEMONT, Yves; Thomas.Passvogel@esa.int; Gerald.Crone@esa.int; Kotska.Wallace@esa.int
Subject: Herschel Optical System Working Group Meeting -Stray light - 23 April 2002 - Minutes of Meeting



Mac Word 3.0

Mesdames, Sirs

Please find here below the MoM of the last Herschel Optical System Working Group meeting (N 4).

Participants:

A. Richards (RAL)
D. Beintema (SRON)
A. Frey; H. Hartmann (ASED)
J. Fischer (NRL)
P. Martin (Alcatel)
G. Pilbratt; D. Doyle; K. Wallace; V. Kirchner; D. de Chambure (ESA)

Presentation

The meeting took place as foreseen at ESTEC with a presentation from ASED (A.Frey) on their on-going work on the Herschel stray light analysis essentially with regards to SPIRE instrument (NB: Analysis with PACS will follow soon. See Plan of actions below).

(See attached file: STR_MT_23_4_02.doc)

Conclusions and actions

Their analysis with the latest Herschel telescope design (i.e. with the hexapod holding M2) and with two of the initially assumed largest contributors (thermal emission of M1 central baffle and CVV cryostat baffle) shows that the stray light levels indicated in the specification could be met. But, these preliminary results have to be confirmed with more detailed analysis (some contributors have been omitted: rim zone between M1 central baffle and the mirror etc..) and some have not been computed yet confirmation of some of the assumptions (cold stop size..) verification of the model (some "leaks" have been observed in the stray light model of SPIRE).

AI 1 ASED to send SPIRE stray light mathematical model to RAL in order confirm that the model is in agreement with their design (due date 30/4/02)
AI 2 RAL to confirm that the model is conform to the design of their instrument (due date 7/5/02)
AI 3 RAL to confirm the reflectivity values of their unit (due date 15/05/02)
AI 3 Instrument teams to confirm cold stop dimensions and position (wrt pupil size) (due date 6/5/02)
AI 4 ASED to rerun analysis with emissivity of 0.05 for the M1 central baffle (Al Kapton foil) (due date 24/05/02)

Recommendation

ASED also stated in their presentation that the results will be improved if the instruments in general and SPIRE in this case in particular could lower the reflectivity of the illuminated elements

Future work

As it can be seen in their presentation, ASED is working on a cone design for the central baffle of the telescope instead of the cylinder. The idea is to "look" more to open the view to open space instead of "warm" surfaces. This new design is not agreed and needs further confirmation. For sizing of the cone, the hard constraint is the size of the central hole of the Primary Mirror which is 560 mm: any cone or cylinder design will have to adapt to this size. G. Pillbratt will seek advice among the PIs to get their impression on the stray light design.

AI 5 G. Pillbratt to contact PIs for getting their impression on the telescope central baffle design (due date 2/05/02 - done in the mean time)

ASED will rerun the stray light analysis for SPIRE with the remarks above for 2 cases with a cylindrical and a conical stray light baffle. Immediately, afterwards, ASED will start working on PACS for also the two stray light baffle designs.

Due to the coming intense work, Volker Kirchner has proposed to support ASED in their analysis by running a few cases on ASAP (CPU time offered) and by trying to find the leaks in the SPIRE model. ASED has only 2 licenses for their whole company for all the projects which limits currently the work speed. For info, any additional license will cost 30,000 USD (nice chap these Yanks from Texas !!).

Next meeting will be on May 29, June 6 or 12, 02 (date tbc ASAP i.e. next week on May 6) in Astrium-Toulouse-France.

Thanks and regards

Daniel de Chambure
Herschel/Planck Telescope Engineer
ESA-ESTEC [room Ag 109]
Postbox 299
2200 AG Noordwijk (The Netherlands)

tel : 31-71-565 4758
fax: 31-71-565 5751
mobile : 31-6-28801086
e-mail: Daniel.de.Chambure@esa.int - Web: <http://sci.esa.int/>