 FAX	Alcatel Space Industries Herschel Planck project office OS/M/H Fax + 33 4 92 92 30 10 Tel Secretary: + 33 4 92 92 30 88	Nb pages 1/2
	Date 11/03/04	Référence H-P-ASP-LT-4461

DE / FROM: Ph. MARTIN

TO PACS N. GEIS SPIRE-ALC-COM-002120

SPIRE B. SWINYARD

HIFI N. WHYBORN

Cc: P. RIDEAU, G. DOUBROVIK, B. COLLAUDIN

Cc: **ASED** S. IDLER, D. SCHINCK
ESA D. De CHAMBURE, G. PILBRATT
ASEF Y. TOULEMONT, D. PIEROT

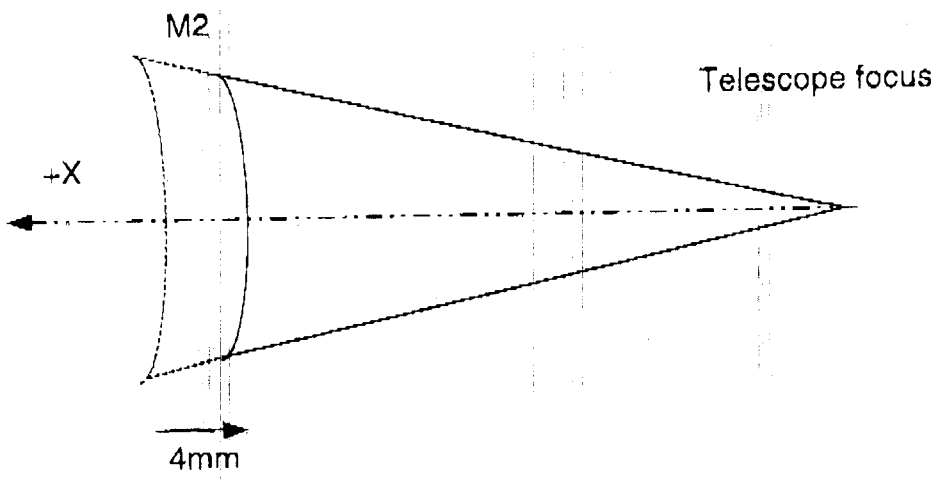
Objet / Subject: Herschel Telescope pupil – manufacturing

Dear all,

In the last Herschel Telescope Interface meeting, Astrium France presented the way they intend to adapt M2 shape and position to the manufactured M1 radius of curvature .


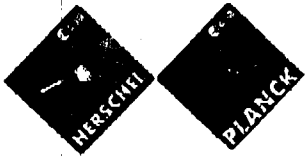
In order to maintain image quality, alignment, F/number, and focal length, it's foreseen to make M2 come closer to instruments (approximately 4mm). The M2 size would be reduced accordingly (-0.5mm in diameter) to maintain F#.

This is shown on the next figure



notes 1 M1, Focus location, focal length, F-Number and other interfaces remain unaffected.

2 These figures will be confirmed and refined in April, once the M1 manufacturing will have progressed.

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The only impact on the instrument design is a defocus on the pupil imaging.
A brief computation shows that the Rayleigh depth of field tolerance for pupil in M2 space is around

- +/-8.6mm for SPIRE
- +/-2.7mm for PACS

This tends to show that, unless your pupil imaging is diffraction limited, this pupil defocus could be acceptable. Main impact would be on PACS, due to the shorter wavelength

Could you, please, check the acceptability of this optical interface modification, and the eventual impacts on your side (performance, re-alignment...)?

Do not hesitate to contact me if you need any further information.

An answer within two weeks would be appreciated

Best regards

Philippe Martin

