

	Operation Change Request		OCR No: 020
			Issue: A
Title: Short-term modification of limb nighttime tangent height range to study NO ₂ airglow			
<u>Description of Request:</u> We request a change of tangent height range for eclipse limb mesosphere observations (Measurement category 26) from 75 – 150 km to 25 – 100 km for a limited period of time (a few days). The exact date/dates, when this temporary change is implemented are of minor importance. The request is based on the following scientific reason: The reaction of NO and O ₃ is known to lead to the chemiluminescence of an excited NO ₂ state covering a wide wavelength range. To date, there has only been little evidence that this airglow continuum can also be observed in the terrestrial nighttime stratosphere. The emission is thought to be the most intense in the upper stratosphere between about 40 and 50 km. By starting the limb scans at 25 km instead of 75 km, the relevant altitude range can be covered, and SCIAMACHY can make an important contribution to a better understanding of the terrestrial nightglow. This airglow feature, if identified in the SCIAMACHY observations may allow the retrieval of upper stratospheric NO profiles at night, e.g., during polar winter.			
Originator: Christian von Savigny, Heinrich Bovensmann	Date of Issue: 2004-06-17	Signature: CvS 2004-06-17	
<u>Assessment of SSAG (necessary for requests by scientists):</u>			
SSAG: H. Bovensmann	Date: 2004-06-17	Signature: H. Bovensmann, 2004-06-17	
<u>Classification of OCR:</u> D			
<u>OCR Analysis (incl. Implementation Option):</u>			
This OCR can be implemented by modifying the Basic Profile no. 5 from -213848×10^{-6} rad (= -24.5° = 150 km) to a scanner elevation angle equivalent to about -25.4° (100 km).			
The modification is not affected by the planning cycles. Thus it is proposed to implement the modified Basic Profile no. 5 for a period of 7 days (100 orbits), starting with orbit 12572 (July 26 th).			
SOST: M. Gottwald, DLR-IMF (ESA, Industry if necessary)	Date: 21/06/2004	Signature: via e-mail 21/06/2004	
<u>Approval of Proposed Implementation:</u>			
Originator Approval: H. Bovensmann	Date: 2004-07-02	Signature: e-mail, H. Bovensmann, 2004-07-02	
SSAG Approval: H. Bovensmann	Date: 2004-07-02	Signature: e-mail, H. Bovensmann, 2004-07-02	
<u>Decision / Approval:</u>			
OCR shall be implemented as proposed.			
DLR Approval: Ch. Chlebek	Date: 2004-07-20	Signature: e-mail, Ch. Chlebek, 2004-07-20	

Implementation by SOST:

The Elevation Basic Profile no. 5 will be modified between orbits 12672 – 12772 (August 2nd – August 9th) from -213848×10^{-6} rad (= -24.5° = 150 km) to -221657×10^{-6} rad (= -25.4° = 100 km). Thus for a period of 7 days the limb_mesosphere altitude range will be 25-100 km. From orbit 12773 onwards, limb_mesosphere measurements will then start again at an elevation of 150 km and scan down to 75 km.

SOST: E. Krieg, DLR-IMF

Date: 26/07/04

Signature: via e-mail, 26/07/04