

H₂O -vertical profile

GOMOS GBMCD

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Ambientale, IMAA - CNR**

Correlative H₂O -measurements

LAUTLOS - hygrosonde intercomparison campaign

- Location: Sodankylä - Finland, 67°36' N - 26°63' E, 179 m a.s.l
- LAUTLOS -period: 28. Jan - 26. Feb 2004
- 13 vertical H₂O profiles:
 - NOAA chilled mirror hygrosonde
 - FLASH fluorescence hygrosonde
- Semi-continuous timeserie of H₂O -profiles on LAUTLOS -period
 - MIAWARA 22 GHz Middle Atmospheric H₂O Radiometer

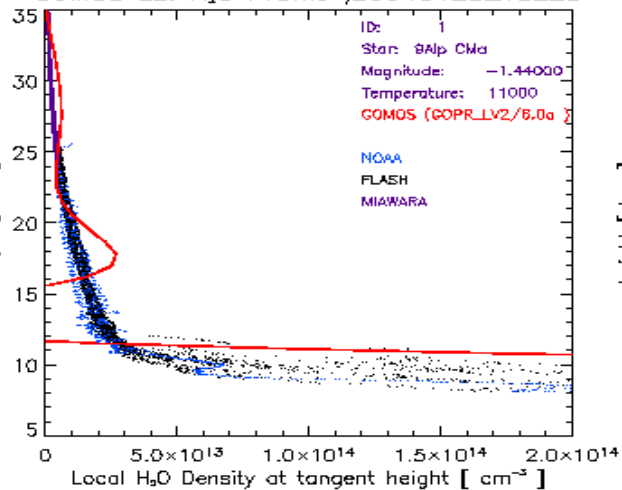
IMAA - CNR radiosonde profiles

- Tito Scalo, Potenza - Italy, 40°36' N - 15°44' E, 820 m a.s.l
- 1 GOMOS occultation was compared to averaged H₂O MR obtained from radiosonde RH
- Instrument: Vaisala RS80-A

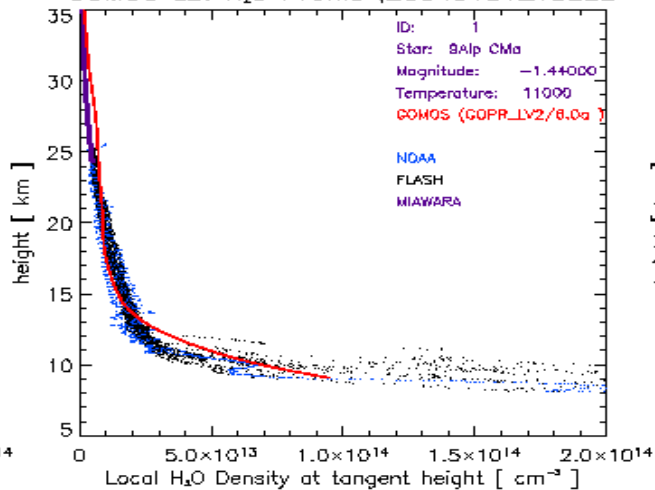
GOMOS measurements during the LAUTLOS-WAVAP campaign on 28. Jan – 26. Feb 2004 at Sodankylä

Date m/dd/yy	H2O Measurements (UTC)			Specifications of the GOMOS occultaion							Validation results	
	Balloon	MIAWARA	GOMOS	Orbit	Star	Mv	T (K)	TGP alt. (Km)	Type	Q. Flag	Direct match	
1.28.04		24h	18:22	10001	1	-1.440	11000	135.6	7.8	twilight	Reasonable	None
1.29.04	18:00	24h										
1.30.04	17:30	24h										
1.31.04	16:30	24h	18:28	10044	1	-1.440	11000	139.5	8.6	twilight	Reasonable	All
2.1.04		24h										
2.2.04		24h										
2.3.04			18:34	10087	1	-1.440	11000	135.3	10.3	twilight	Reasonable	None
2.4.04		24h	18:02	10101	1	-1.440	11000	136.1	8.5	twilight	Reasonable	MW
2.5.04		24h	19:09	10116	179			133.1	14.3	twilight	Zeros	MW
2.6.04	19:55	24h										
2.7.04		24h	18:08	10144	1	-1.440	11000	139.8	8.8	twilight	Reasonable	MW
2.8.04			17:37	10158	1	-1.440	11000	138.0	7.8	twilight	Reasonable	None
2.9.04			18:43	10173	179	3.032	3.032	136.5	14.4	twilight	Zeros	None
2.10.04			18:12	10187	179	3.032	3.032	136.1	15.1	twilight	Zeros	None
2.11.04	17:30	24h										
2.12.04		24h										
2.13.04		24h										
2.14.04		24h										
2.15.04	17:30	24h	18:54	10259	132	2.803	6900	137.3	15.9	twilight	Zeros	All
2.16.04	17:30	24h										
2.17.04	17:30	24h										
2.18.04	17:30	24h	19:00	10302	132	2.803	6900	135.8	16.1	twilight	Zeros	All
2.19.04		24h	18:29	10316	132	2.803	6900	139.2	15.6	twilight	Zeros	MW
2.20.04		24h										
2.21.04		24h	19:06	10316	132	2.803	6900	137.5	15.4	twilight	Zeros	MW
2.22.04		24h										
2.23.04	17:30	24h										
2.24.04	17:30	24h										
2.25.04	17:30	24h										
2.26.04	17:30	24h										

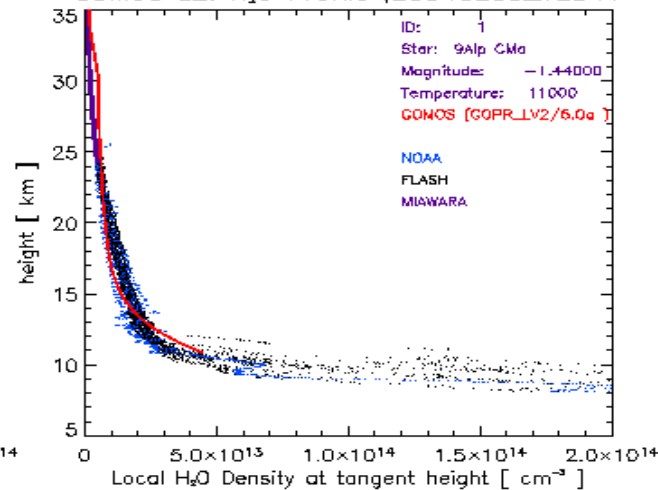
GOMOS L2: H₂O Profile ,20040128_18223



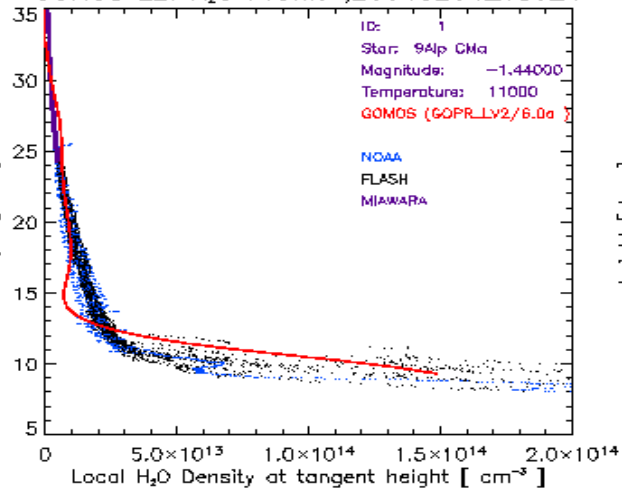
GOMOS L2: H₂O Profile ,20040131_18282



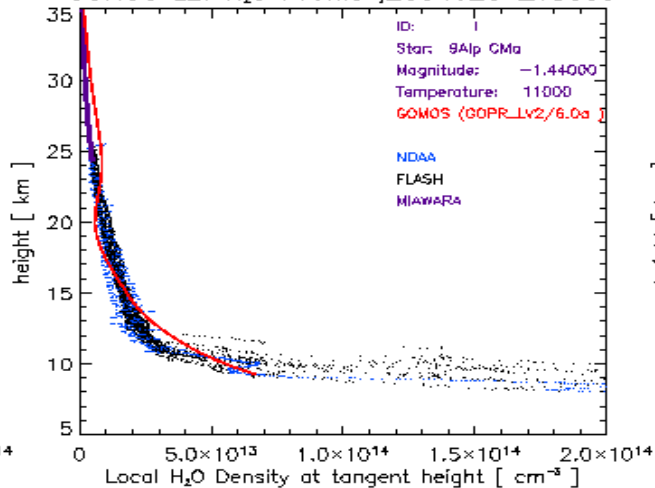
GOMOS L2: H₂O Profile ,20040203_18341



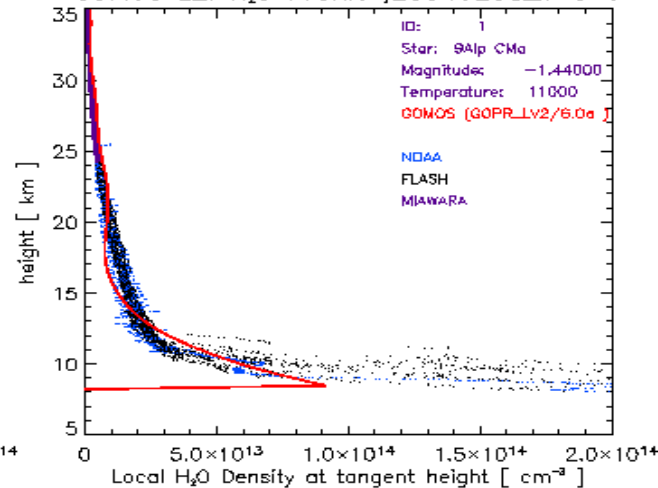
GOMOS L2: H₂O Profile ,20040204_18024



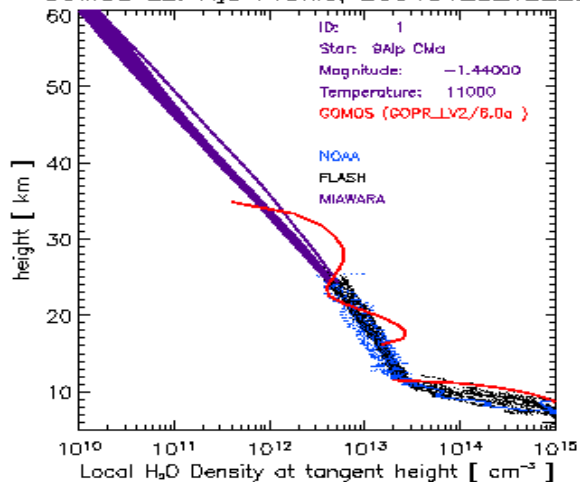
GOMOS L2: H₂O Profile ,20040207_18083



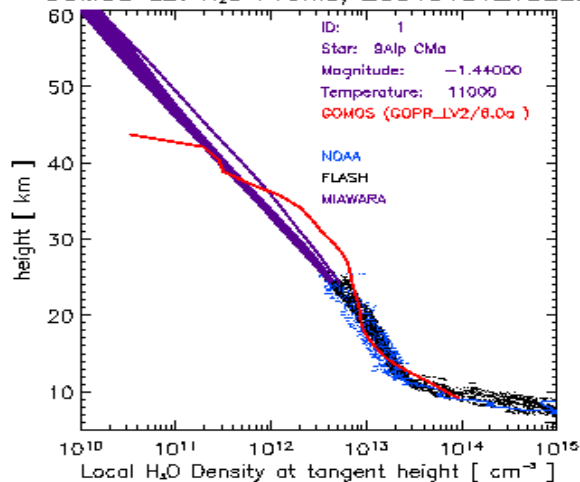
GOMOS L2: H₂O Profile ,20040208_17370



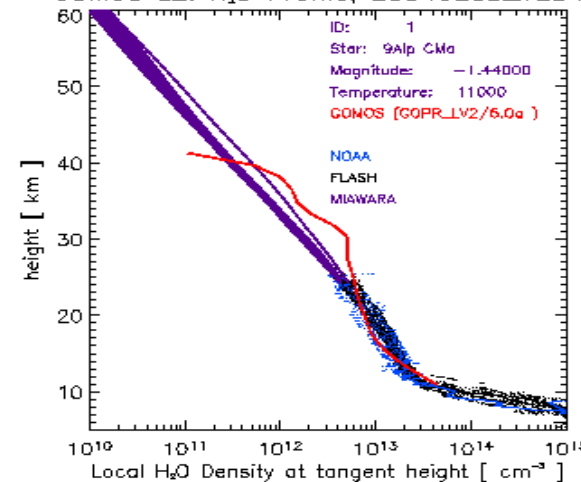
GOMOS L2: H₂O Profile, 20040128_18223



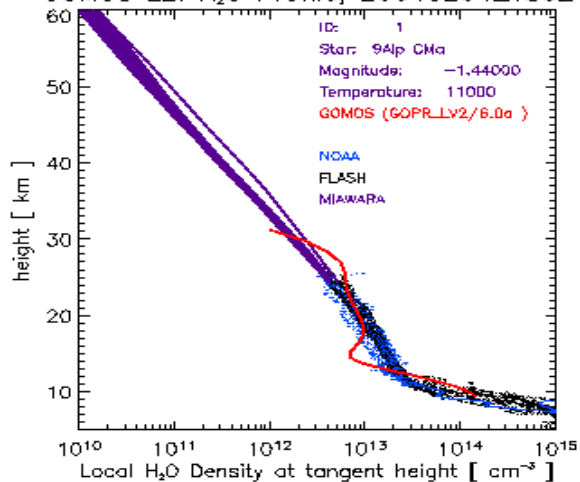
GOMOS L2: H₂O Profile, 20040131_18282



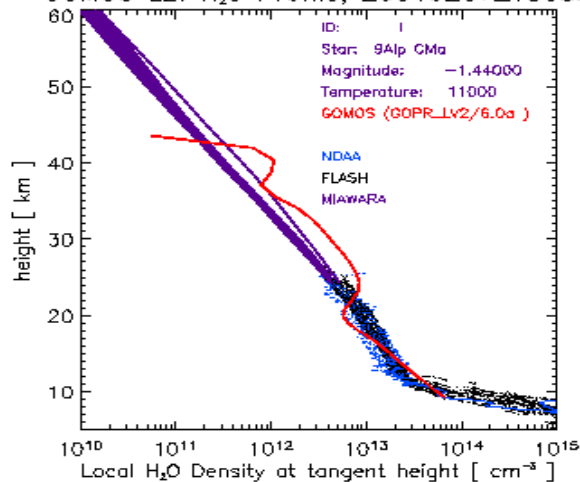
GOMOS L2: H₂O Profile, 20040203_18341



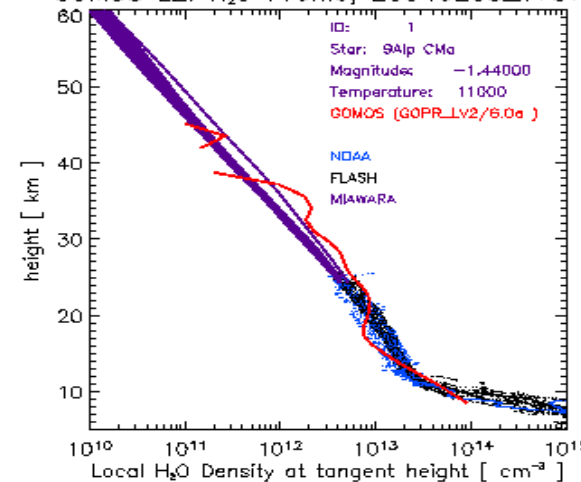
GOMOS L2: H₂O Profile, 20040204_18024



GOMOS L2: H₂O Profile, 20040207_18083



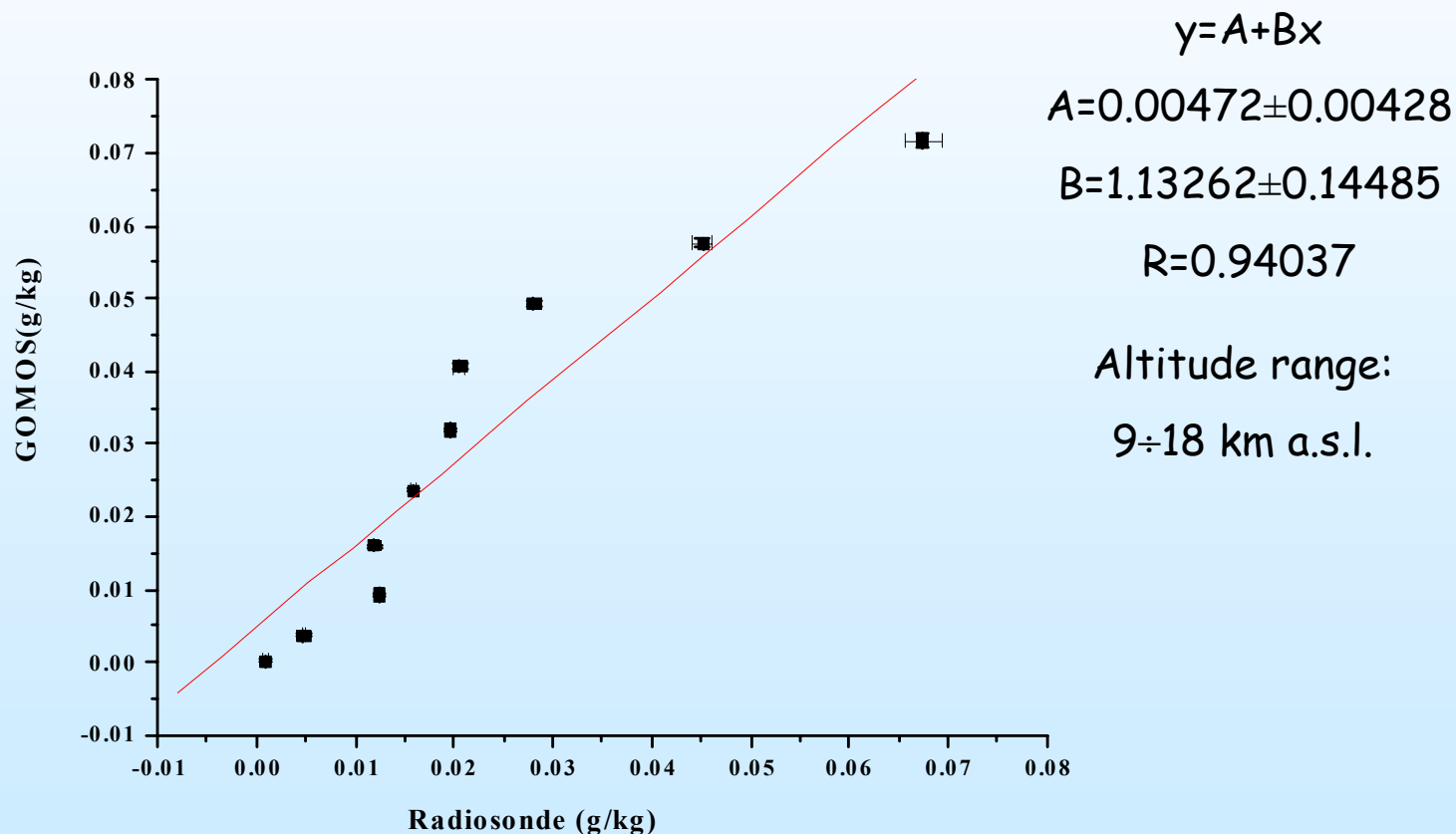
GOMOS L2: H₂O Profile, 20040208_17370



Radiosonde measurements and GOMOS overpasses IMAA-CNR, Tito Scalo (PZ) Italy

Date	Radiosonde launch (UT)	GOMOS overpass (UT)
19 Aug 2002	19:35	20:56
21 Aug 2002	20:20	21:33
26 Aug 2002	20:03	20:36
29 Aug 2002	21:00	20:43
02 Sept 2002	20:00	20:17
04 Sept 2002	20:31	20:54
16 Sept 2002	20:44	21:16
18 Sept 2002	20:32	20:00
19 Sept 2002	10:17	10:05
02 Oct 2002	20:54	21:14
14 Oct 2002	20:15	21:35
16 Oct 2002	20:17	20:34
22 Oct 2002	20:25	22:21
23 Oct 2002	20:02	20:14
28 Oct 2002	20:56	20:56
29 Oct 2002	20:14	20:25
07 Nov 2002	20:27	22:19
11 Nov 2002	19:52	20:17
13 Nov 2002	20:22	22:30
25 Nov 2002	21:06	21:16
11 Dec 2002	21:35	21:13
28 Jan 2003	20:51	21:06
07 Apr 2003	21:06	21:36
14 Apr 2003	21:07	21:16
23 Apr 2003	21:18	21:34
28 Aug 2003	18:26	21:41
04 Sept 2003	19:41	21:22
02 Oct 2003	18:52	21:41
17 Nov 2003	17:50	22:55
01 Dec 2003	17:59	21:55
18 Mar 2004	18:41	22:02
25 Mar 2004	18:19	20:03
05 Apr 2004	18:49	20:46

18 September 2002, 20:14 UT
 IMAA-CNR Tito Scalo (PZ) Italy, 40°36' N - 15°44' E, 820 m a.s.l.
 GOMOS orbit 02888 star 63 type twilight



GOMOS H2O GMBCD Conclusions

- Difficult to calculate error bars for GOMOS L2 H₂O profiles from GMBCD comparisons due to lack of suitable occultations
- Some qualitative results:
 - Bright limb occultations:
 - » Not usable
 - Twilight occultations:
 - » Brightest star (star ID 1) produced sensible H₂O profiles
 - » Due to lack of matching measurements statistic analysis was not possible
 - Dark limb:
 - » No data available for validation purposes