Meteor 0201 (2020)

Stefan Kinne (2 feb 2am)

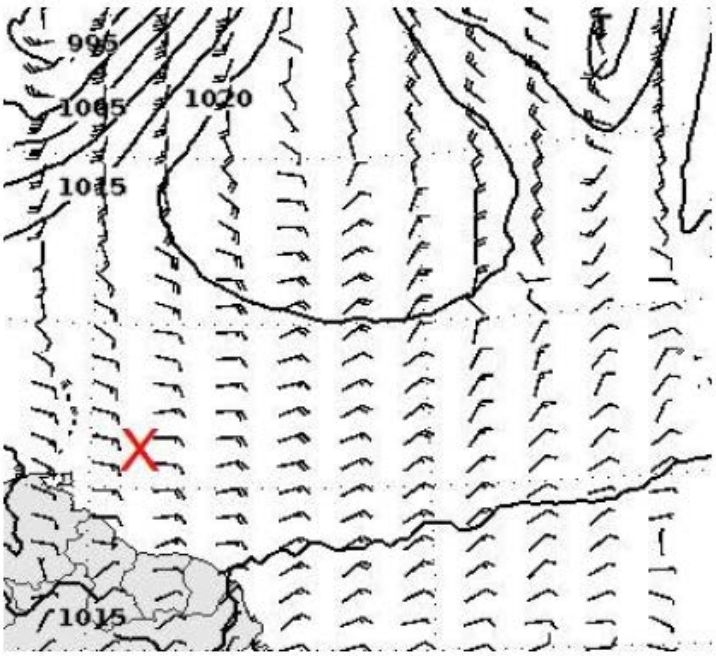
1. Objective

Collecting CTD profiles around the glider box. Following the METEOR track from L1 southward with CTD at the common stops ca every 3 hours. Seven radiosondes were launched at 2.45, 6.45, 10.45, 14.45, 16.33 (DWD), 18.45 and 22.45 UTC. Cloud-kite night session on a west to east leg near 12.7N.

The sunrise (above the horizon with the sun more white than yellow) indicated continued dust in the atmosphere. We continued to follow the METEOR track from L1 southward and well above the L2 point started the early night cloud-kite run. CTD stops during the day always include 2 UAV flights of ca 10 minutes each for profiling the lower 300m and an upper ocean layer probing (with Rodney) for 10 minutes after the station. This morning the Microbiology group took again their late night / early morning water samples. They have switched now from a 2-day to a 3-day repeat cycle due to the heavy filtering work-load and probe preparation.

2. Synoptic Situation

Satellitenbild GOES16 **01.02.2020** 13:20 UTC



Vorhersage für Sonntag 12 UTC

Weather observations (every 3hr)

```
20 02 01001 99143 70572 11497 21007 10264 20221 40175 53009 70680 82200 22241 04271
2//// 3//// 4//// 5//// 6//// ICE /////
 20 02 01031 99143 70574 46/// /0607 10262 20219 40180 50005 7//// 8//// 22261 04270
2//// 3//// 4//// 5//// 6//// ICE /////
 20 02 01061 99141 70574 16/// /0807 10260 20217 40169 58011 7//// 8//// 22241 04270
2//// 3//// 4//// 5//// 6//// ICE /////
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 20 02 01091 99141 70573 46/// /0709 10259 20216 40168 55001 7//// 8//// 22221 04270
2//// 3//// 4//// 5//// 6//// ICE /////
 20 02 01121 99139 70572 11497 10808 10262 20209 40185 51017 70600 81200 22241 04273
20201 309// 40703 5//// 6//// ICE /////
 20 02 01151 99136 70572 41497 10808 10264 20214 40186 50001 70600 81200 22242 04273
20301 309// 40803 5//// 6//// ICE /////
 20 02 01181 99133 70572 11497 10908 10264 20217 40160 58026 70600 81200 22242 04274
20301 310// 40803 5//// 6//// ICE /////
 20 02 01211 99131 70572 41597 10808 10265 20215 40155 56005 70600 81200 22241 04275
20301 310// 40903 5//// 6//// ICE /////
```

A mostly sunny and dusty day. No rain, no cirrus, just a few low altitude CU patches. Total and dust AOD were higher than yesterday (at 0.3 and 0.2) and (pretty) constant all day. (Tomorrow, the extra dust AOD is expected to be gone).

3. Cruise-day Elements

IWV (integrated water vapor): 31 kg /m2 +/- 1
LWP (liquid water path): 23 g /m2 +/- 24

Time	0-3UTC	4-6UTC	7-9UTC	10-12UTC	13-15UTC	16-18UTC	19-21UTC
Height_m	558.98	536.62	491.90	581.34	603.70	626.05	693.13
max_hydro_frac_low	0.06	0.07	0.06	0.06	0.04	0.06	0.09
Height_m	1296.83	1207.39	1945.24	1207.39	1207.39	1229.75	1319.19
max_hydro_frac_mid	0.01	0.00	0.04	0.01	0.00	0.00	0.03
Height_m	12878.56	12836.47	12920.65	12836.47	12836.47	12920.65	5987.42
max_hydro_frac_high	0.00	0.00	0.00	0.00	0.00	0.00	0.00

low=up to 1200m, mid=up to 6000m, high=up to 15000m

hourly means of ship data (1st line 0-1 UTC, 2nd line 1-2 UTC … last line 23-24 UTC)

salinity PSU	Tdew °C	Tair °C	Twater °C	TrueDir deg	RH %	rel.Wind m/s	trueWind m/s	lw Rad W/m²	sw Rad W/m²	lat °N	lon °E
35.5593	21.6	26.33	27.06	97.25	74.85	6.81	6.37	391.57	-1	14.27	-57.25
35.5626	21.7	26.4	27.08	85.25	75.08	1.68	6.11	394.17	-1.4	14.27	-57.32
35.565	21.69	26.19	27.03	71.93	75.83	5.93	6.56	400.28	-1.23	14.27	-57.43
35.6015	21.45	26.15	27.03	80.38	74.98	7.81	6.94	394.05	-1	14.22	-57.43
35.4762	21.63	26.08	26.94	79.57	76.18	6.68	6.11	396.73	-1	14.1	-57.43
35.4676	21.78	26.01	26.97	79.24	77.17	6.64	6.34	397.07	-1	14.09	-57.43
35.4691	21.73	25.96	26.94	72.8	77.15	7.75	7.46	397.38	-1	14.09	-57.43
35.4779	21.77	25.88	26.91	65.62	77.72	9.95	8.14	403.25	-1	14.09	-57.42
35.5261	21.74	25.89	27.01	67.73	77.52	12.06	8.64	393.83	-1	14.09	-57.31
35.5248	21.41	25.93	27.09	72.75	75.78	8.31	7.99	391.77	-1	14.09	-57.25
35.4406	21.43	26.08	27.19	78.47	75.17	9.14	8.37	400.75	20.03	14.01	-57.24

35.3785	21.27	26.15	27.27	80.6	74.15	8.23	8.2	396.78	170.55	13.9	-57.24
35.3648	21.2	26.27	27.31	78.52	73.27	8.86	8.56	392.45	391.33	13.87	-57.25
35.2897	21.63	26.37	27.3	82.52	74.75	9.58	8.91	394.72	585.65	13.75	-57.24
35.2247	21.49	26.47	27.29	87.75	73.73	9.85	9.03	398.1	756.5	13.62	-57.25
35.219	21.49	26.45	27.32	88.18	73.73	8.96	8.28	398.7	849.53	13.58	-57.25
35.2316	21.43	26.51	27.36	90.95	73.25	10.17	8.83	400.31	852.38	13.48	-57.25
35.2179	21.46	26.51	27.41	91.48	73.42	9.78	8.52	399.47	789.48	13.35	-57.25
35.2513	21.45	26.5	27.4	87.23	73.38	7.82	7.54	401.02	610.23	13.3	-57.25
35.2967	21.3	26.51	27.48	88.87	72.68	9.78	8.5	398.15	441.02	13.25	-57.25
35.3372	21.16	26.53	27.5	84.57	71.97	9.01	8.11	398.8	212.27	13.12	-57.25
35.3374	21.2	26.46	27.5	76.23	72.43	8.51	8.09	400.07	32.92	13.02	-57.25
35.3318	20.98	26.41	27.5	73.28	71.7	7.06	7.99	398.77	-1	12.98	-57.26
35.353	20.94	26.46	27.52	75.93	71.26	6.18	8.29	404.31	-0.95	12.83	-57.35

inter-calibration: **none**
CTD stations: **9**
radiosondes: **7**
overflights: **none**

station no.	UTC	device	action	latitude	longitude	depth	contact person
M161 96	1 feb 2020 / 00:16-00:52	CTD	CTD	14°16.333 N	57°14.728’ W	800	Baranowski
M161 97	1 feb 2020 / 02:23-02:56	CTD	CTD	14°16.320 N	57°25.891’ W	800	Baranowski
M161 98	1 feb 2020 / 04:34-05:32	CTD	CTD	14°05.516 N	57°25.900’ W	800	Baranowski
M161 99	1 feb 2020 / 06:46-07:20	CTD	CTD / MPI	14°05.516 N	57°25.899’ W	250	Baranowski
M161 100	1 feb 2020 / 09:08-09:09	CTD	CTD	14°05.529 N	57°14.775’ W	800	Baranowski
M161 101	1 feb 2020 / 11:34-12:10	CTD	CTD	13°53.351 N	57°14.734’ W	800	Baranowski
M161 102	1 feb 2020 / 14:51-15:26	CTD	CTD	13°35.643 N	57°14.732’ W	800	Baranowski
M161 103	1 feb 2020 / 17:59-18:39	CTD	CTD	13°18.054 N	57°14.780’ W	800	Baranowski
M161 104	1 feb 2020 / 21:35-21:52	CTD	CTD	13°00.043 N	57°14.785’ W	800	Baranowski

4. Instrument Status

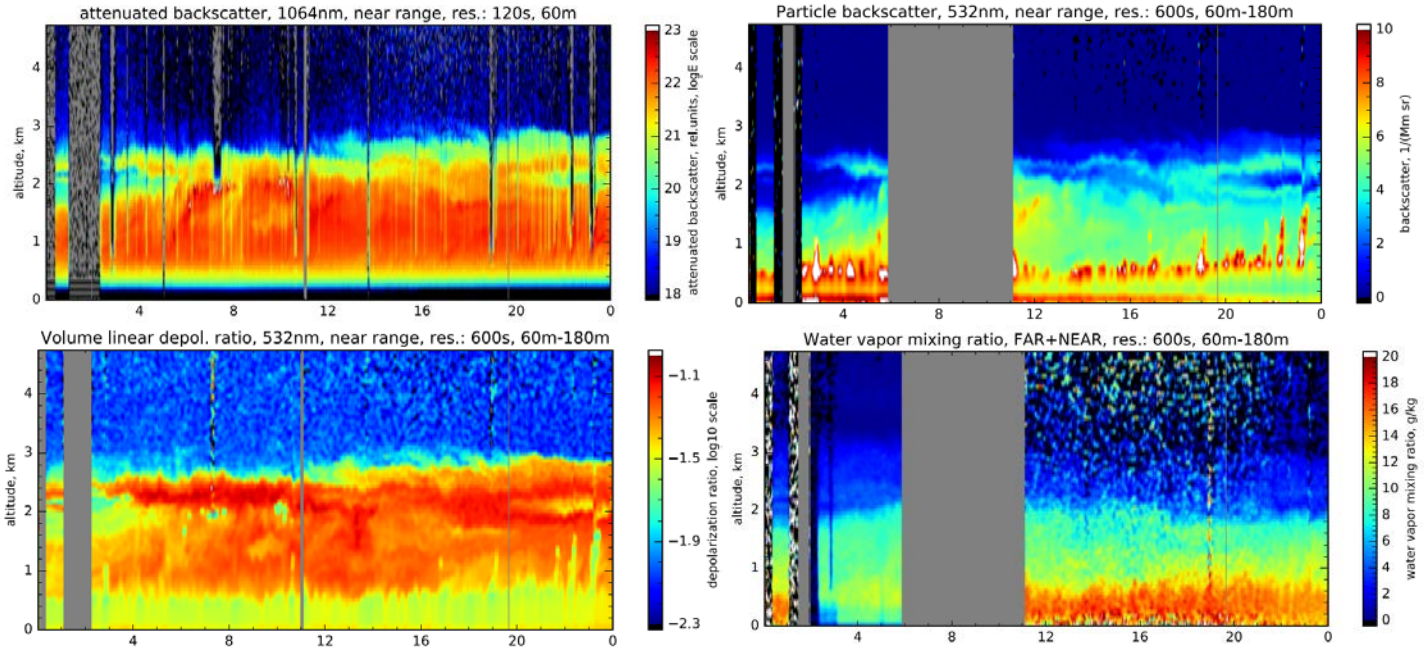
Instrument-Status (**W**-working, **P**-partially-working, **F**-failure, **U**-untested, **R**-ready)

			status	operators
radiosondes			**W**	Katharina, Imke, Yanmichel, Almuth, Kevin, Sebastian, Geiske
cloud-radar			**P**	Heike, Johannes
micro-radiometer			**W**	Heike, Johannes
spect-radiometer			**W**	Heike, Johannes

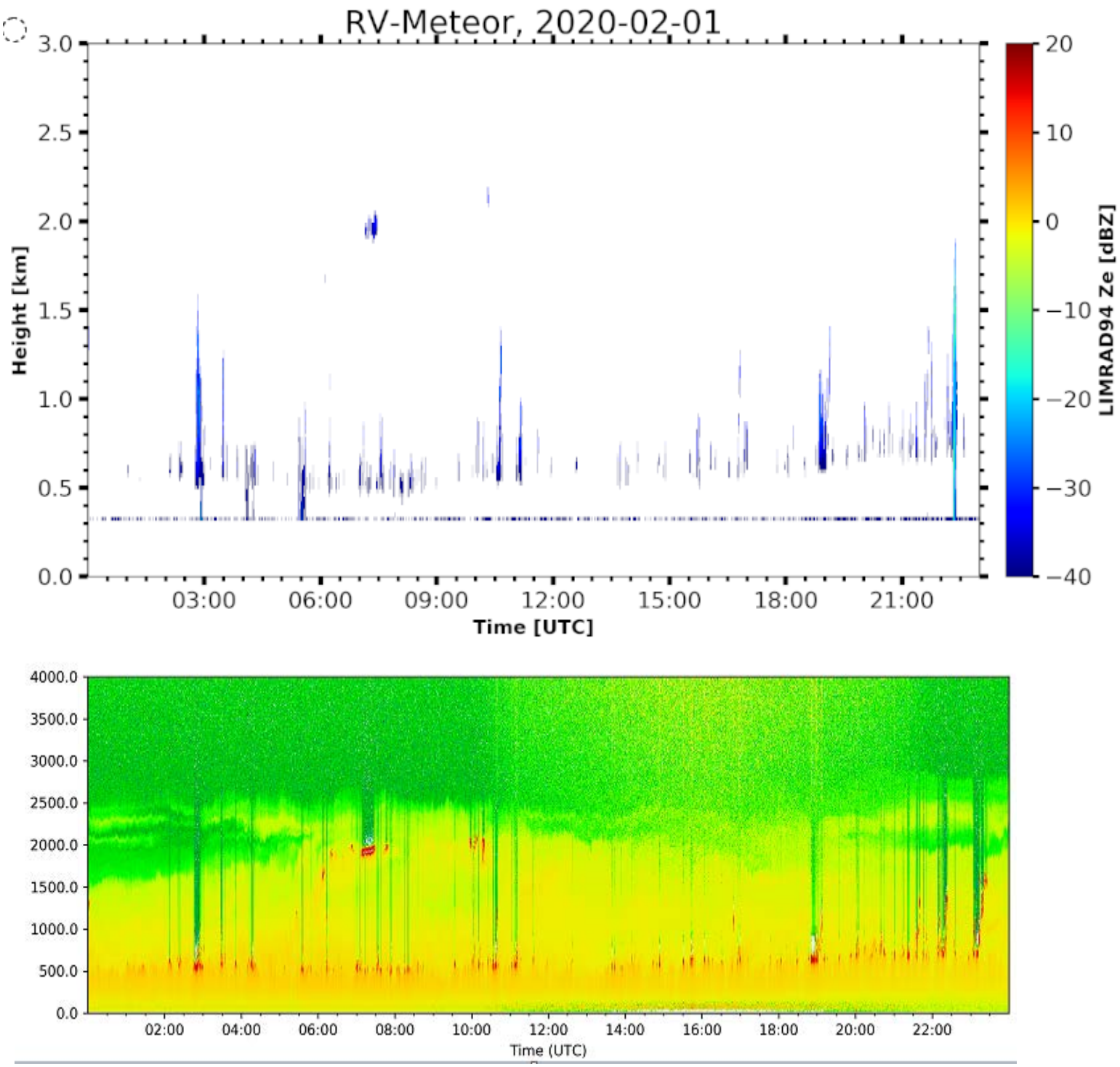
Raman-lidar			W	Ludwig
cloud-kite			W	Oliver, Marcel, Marcel, Antonio, Robert, Sanola
Picarro			W	Sebastian
micro-biology			W	Wiebke, Jan, Abiel
ADPC ocean curr.			W	Callum, Beth
thermosalinograph			W	Callum, Beth
glider			W	Callum, Beth
UAV			W	Darek, Jakub, Michal, Wojciech
eddy-flux-data			W	Katharina, Imke, Heike
wind-lidar (DTU)			W	Geiske, Kevin
wind-lidar (Bre)			P	Geiske, Kevin
MAX-DOAS			W	Alma
ceilometer			W	Stefan
cloud camera			W	Stefan
sunphotometer			W	Stefan, Przemek, Andreas, John, Sanola
aero scat/abs			W	Przemek (Mr P)
WRAS (aero size)			W	Alma
CTD			W	Darek and friends (almost all)
Rodney			W	Darek and his helpers

5. Outlook

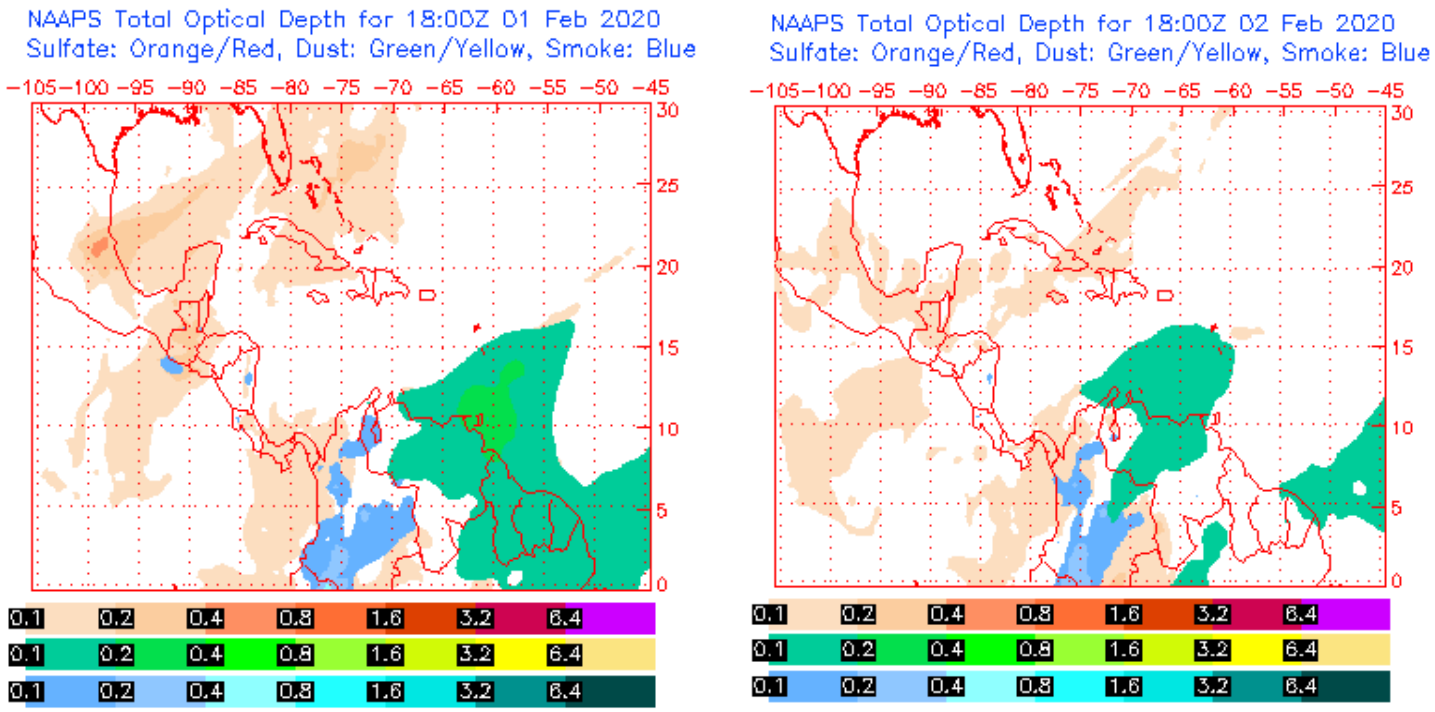
Early next morning we will circle the glider area with CTD profile and then head south towards L2. Just northerly of L2 we plan a late evening (20LT) easterly (west to east) track into the wind for the cloud-kite instrument.



Raman lidar images for Feb2 on the Meteor: backscatter at 1.064um (upper left), backscatter at 0.532um,(upper right), volume depolarization (lower left) and water vapor mixing ratio (lower right)



METEOR radar image (top) and ceilometer image (bottom) for Feb1



NAAPS aerosol forecasts for today (Feb, 18UTC, left panel) and for tomorrow (Feb2, 18UTC, right panel), thus (unlike today) at 13N/57W, no dust should be expected tomorrow (Feb2).