

Meteor 014 (2020)

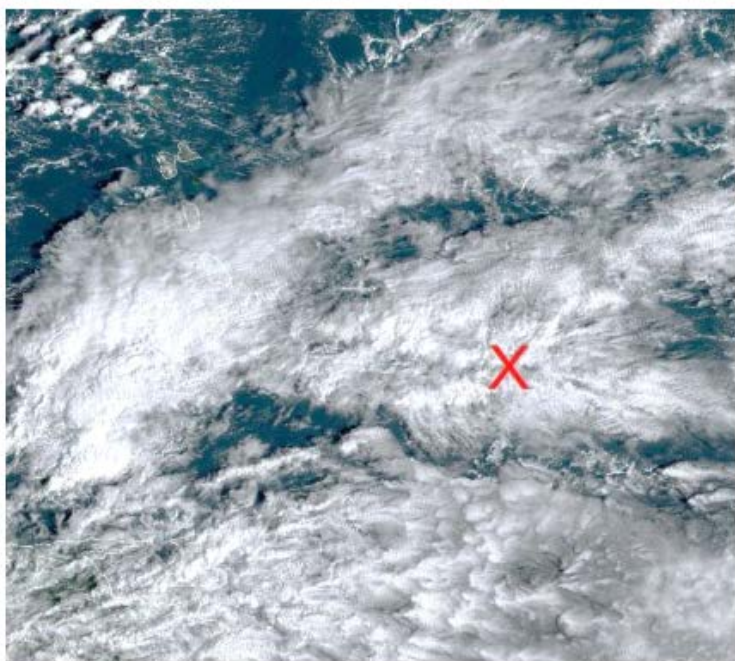
Stefan Kinne (15 feb 2am)

1. Objective

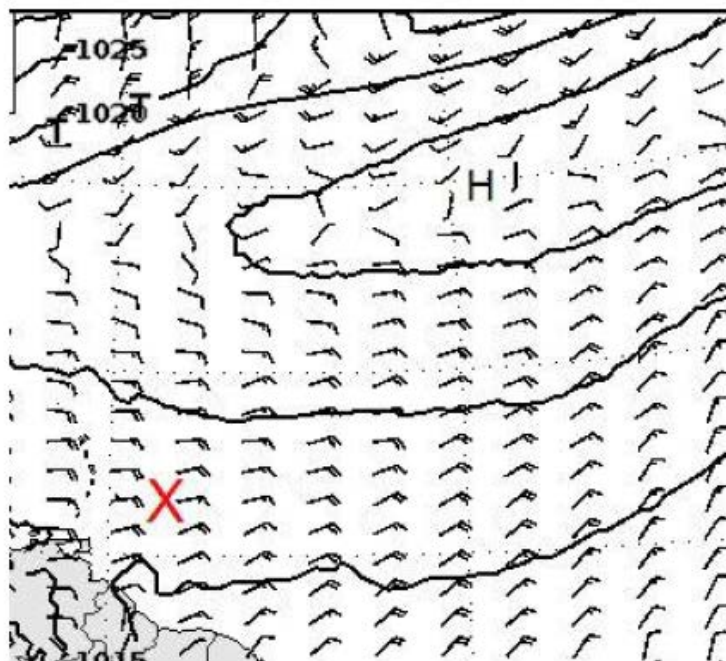
Collecting regional statistics along the Meteor track and on a west to east line in the center of the track with the regular CTD casts every 3 hours and regular radiosondes launches (at 2.45, 6.45, 14.45, 16.33 (DWD), 18.45, 22.45UTC). (The 10.45 launch failed, as in heavy side-winds a person was hit and the sensor broke off)

We reached overnight the northern turnaround point and reversed southward to the center position of the METEOR track where we continued to probe a west-to-east cross-section of the METEOR area box. It was very windy (ca 16m/s) with low and higher mid-level (6-8km) clouds up with no apparent ice. No cirrus. No significant precipitation and overcast conditions except for a brief moment at local noon.

2. Synoptic Situation



Satellitenbild GOES16 14.02.2020 12:50 UTC



Vorhersage für Samstag 12 UTC

Weather observations (every 3hr)

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20 02 14001 99142 70572 11598 10813 10261 20194 40165 53013 70200 81200 22202 04270
2//// 3//// 4//// 5//// 6//// ICE ////
20 02 14031 99144 70572 46//// /0713 10260 20206 40166 50001 7//// 8//// 22202 04271
2//// 3//// 4//// 5//// 6//// ICE ////
20 02 14061 99142 70572 16//// /0711 10252 20202 40157 58009 7//// 8//// 22241 04268
2//// 3//// 4//// 5//// 6//// ICE ////
20 02 14091 99139 70572 46//// /0813 10259 20202 40152 56005 7//// 8//// 22242 04270
2//// 3//// 4//// 5//// 6//// ICE ////

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20 02 14121 99136 70572 11598 70812 10264 20192 40173 53021 70382 8287/ 22242 04270
20302 307// 40805 5///// 6///// ICE /////
20 02 14151 99134 70572 41597 70810 10264 20206 40175 51002 70222 8227/ 22242 04270
20302 307// 40805 5///// 6///// ICE /////
20 02 14181 99133 70574 11598 80708 10260 20210 40163 56012 70322 8222/ 22261 04270
20301 308// 40905 5///// 6///// ICE /////
20 02 14211 99133 70572 41598 70709 10265 20195 40159 55004 70282 8187/ 22221 04270
20301 308// 40804 5///// 6///// ICE /////

Very strong winds in the morning which decreased a bit during the day so that a couple of UAV flights were possible. A cloudy day with basically no blue skies (just 1 sunphotometer sample at lunchtime), no cirrus, though many clouds between 6 and 8km, only traces of precipitation and a relatively low aerosol loading.

3. Cruise-day Elements

IWV (integrated water vapor): 35 kg /m2 +/- 3
LWP (liquid water path): 109 g /m2 +/- 244

Time	0-3UTC	4-6UTC	7-9UTC	10-12UTC	13-15UTC	16-18UTC	19-21UTC
Height_m	1028.52	827.29	827.29	1185.03	827.29	760.21	804.93
max_hydro_frac_low	0.08	0.20	0.13	0.04	0.22	0.11	0.02
Height_m	1341.54	5949.76	5949.76	5874.45	5686.16	5949.76	5573.19
max_hydro_frac_mid	0.09	0.24	0.63	0.56	0.93	0.46	0.97
Height_m	7575.62	6860.15	6523.45	7575.62	7196.84	7870.23	6439.28
max_hydro_frac_high	0.40	0.83	0.70	0.65	0.96	0.69	1.00

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/m ²	sw Rad W/m ²	lat °N	lon °E
35.5189	19.32	26.07	27.07	75.08	65.93	13.5	12.89	390.75	-1	14.18	-57.25
35.5492	19.88	26.01	27.05	79.92	68.63	13.49	12.16	397.72	-1	14.22	-57.24
35.627	20.19	26.07	27.13	77.05	69.63	14.95	12.86	403.03	-1	14.36	-57.25
35.6498	20.35	25.96	27.09	76.03	70.78	13.17	12.29	407.78	-1	14.47	-57.25
35.6407	20.11	25.84	27.12	79.93	70.27	12.99	12.48	410.05	-1	14.44	-57.24
35.592	20.05	25.38	27.04	72.45	71.95	12.11	12.29	416.3	-1	14.29	-57.24
35.5151	20	25.53	26.88	71.93	71.13	11.7	11.46	416.77	-1.03	14.19	-57.25
35.4986	20.41	25.73	26.95	77.9	72.1	12.44	11.99	418.83	-0.77	14.13	-57.24
35.4972	20.15	25.96	27	78.83	69.9	12.97	12.69	412.5	-1	14	-57.24
35.5174	19.18	26.13	26.99	68.1	65.13	13.95	13.74	408.48	-1	13.89	-57.25
35.5336	18.91	26.27	26.98	74.53	63.53	13.62	13.45	406.9	18.65	13.84	-57.24
35.5417	19.11	26.39	27	82.4	63.95	12.83	12.31	409.08	96.32	13.7	-57.24
35.5097	19.64	26.36	26.99	75.68	66.2	11.89	11.44	414.8	130.75	13.6	-57.25
35.502	20.25	26.34	27.02	70.38	68.8	11.62	11.47	422.32	212.28	13.57	-57.24

35.481	20.56	26.36	27.08	76.73	70	11.35	11.18	424.42	359.63	13.43	-57.24
35.4304	20.69	26.34	27.1	76.78	70.73	11.74	11.47	409.37	768.52	13.31	-57.25
35.4349	20.2	26.77	27.11	83	67.02	8.75	10.89	411.23	558.68	13.3	-57.27
35.4731	20.65	27.55	27.12	80.88	65.97	6.27	8.91	422.8	186.3	13.3	-57.38
35.4747	20.3	26.23	27.02	78.88	69.48	9.42	8.69	416.7	155.23	13.3	-57.42
35.4529	19.83	26.28	26.93	71.83	67.22	14.85	10.59	411.33	129.25	13.3	-57.33
35.4377	19.82	26.32	27.02	70.67	67.08	9.67	8.95	411.02	96.15	13.3	-57.25
35.426	20.07	25.89	27.01	65.93	70.05	14.7	11.51	413.87	25.95	13.3	-57.19
35.405	19.34	26.2	26.94	65.72	65.53	14.67	10.73	415.87	-0.92	13.3	-57.06
35.4694	19.37	26.31	27.09	67.44	65.32	11.23	10.26	407.12	-1	13.3	-56.99

inter-calibration: none
CTD stations: 9
radiosondes: 6
overflights: none

station no.	UTC	device	action	latitude	longitude	depth	contact person
M161 193	14 feb 2020 / 00:23-01:03	CTD	CTD	14°10.923 N	57°14.711' W	800	Baranowski
M161 194	14 feb 2020 / 03:28-04:08	CTD	CTD	14°28.559 N	57°14.712' W	800	Baranowski
M161 195	14 feb 2020 / 06:24-07:00	CTD	CTD	14°10.917 N	57°14.746' W	800	Baranowski
M161 196	14 feb 2020 / 09:23-09:59	CTD	CTD	13°53.314 N	57°14.775' W	800	Baranowski
M161 197	14 feb 2020 / 12:30-13:09	CTD	CTD	13°35.656 N	57°14.712' W	800	Baranowski
M161 198	14 feb 2020 / 15:31-16:09	CTD	CTD	13°17.989 N	57°14.711' W	800	Baranowski
M161 199	14 feb 2020 / 17:58-18:38	CTD	CTD	13°17.996 N	57°24.938' W	800	Baranowski
M161 200	14 feb 2020 / 20:13-20:50	CTD	CTD	13°18.017 N	57°14.800' W	800	Baranowski
M161 201	14 feb 2020 / 23:05-23:40	CTD	CTD	13°17.996 N	56°59.418' W	800	Baranowski

4. Instrument Status

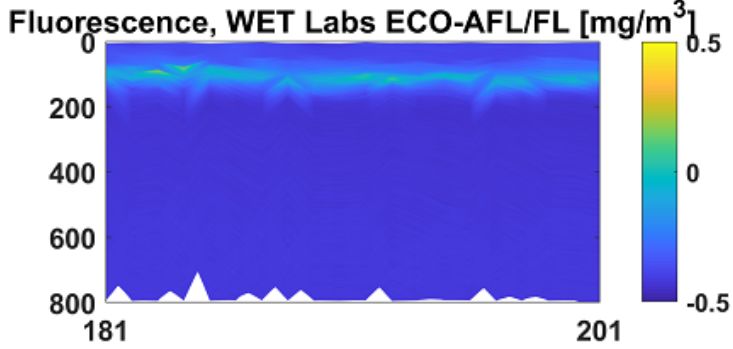
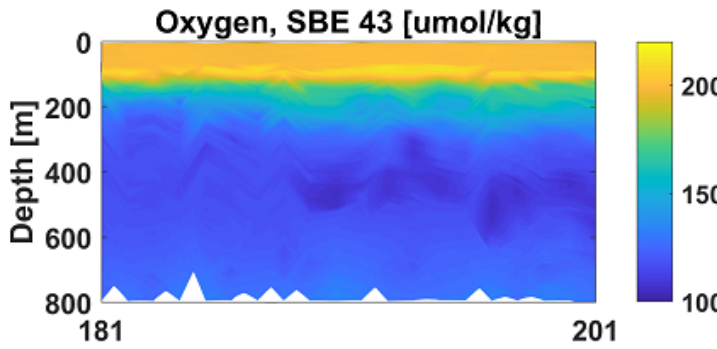
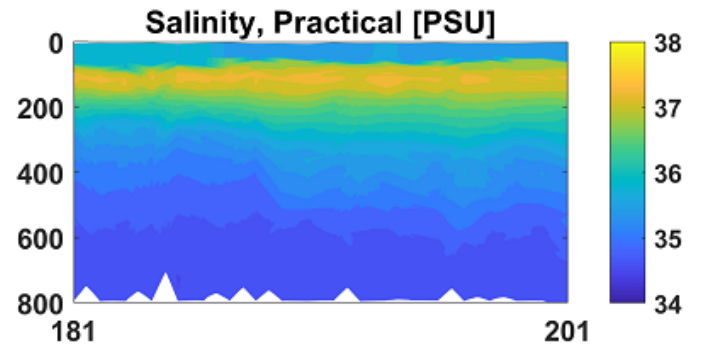
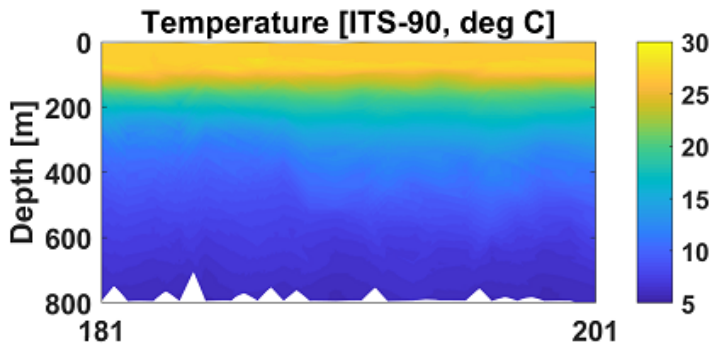
Instrument-Status (**W**-working, **P**-partially-working, **F**-failure, **U**-untested, **R**-ready, **L**-lost)

	status	operators
radiosondes	W	Katharina, Imke, Yanmichel, Almuth, Kevin, Sebastian, Geiske
cloud-radar	W	Heike, Johannes
micro-radiometer	W	Heike, Johannes
spect-radiometer	W	Heike, Johannes
Raman-lidar	W	Ludwig
spare cloud-kite	U	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, Przemek, Beth, Callum, Alma, Sanola, Kevin, Robert, Wojtek, Almuth
Rodney			W	Darek, Jakub, Przemek

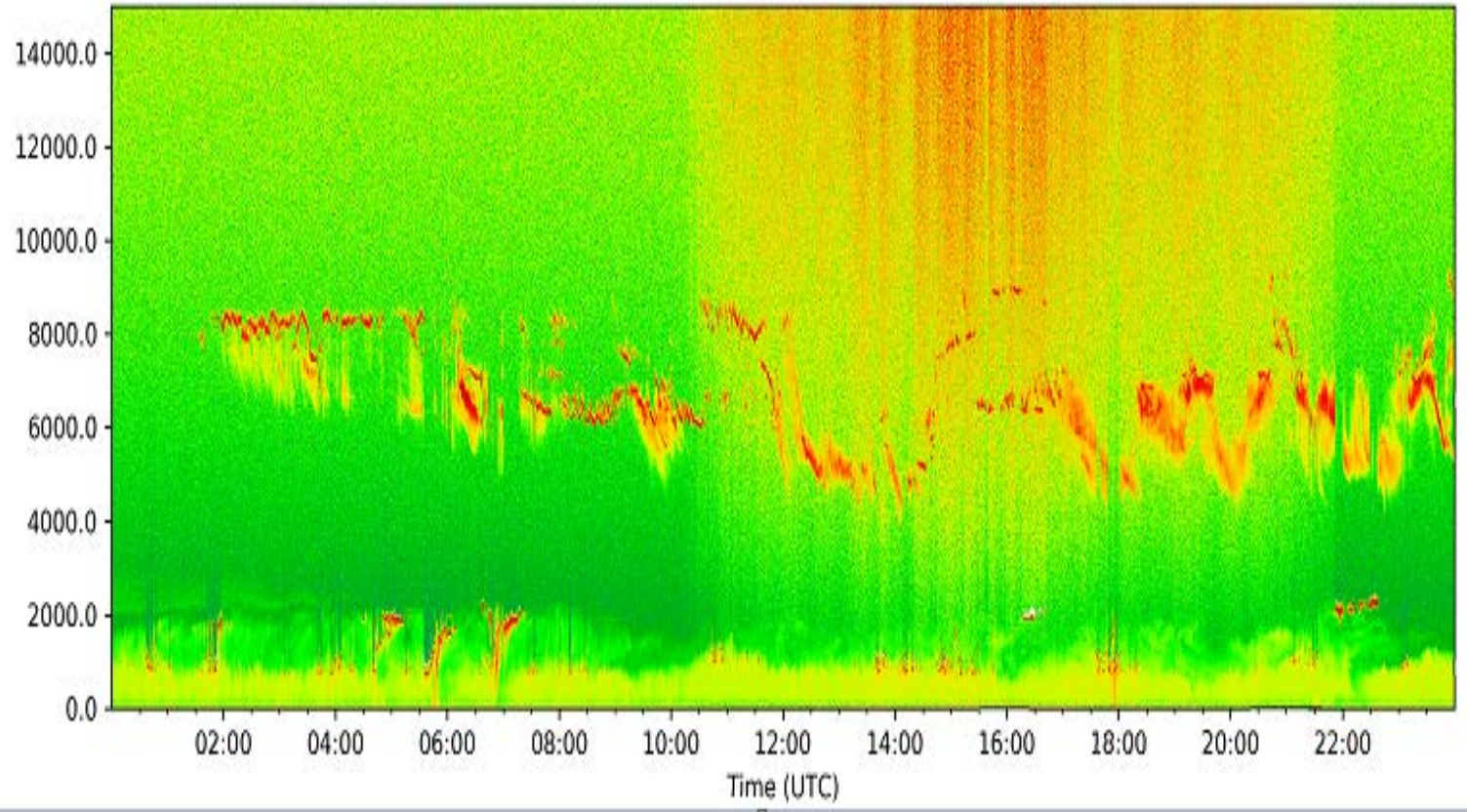
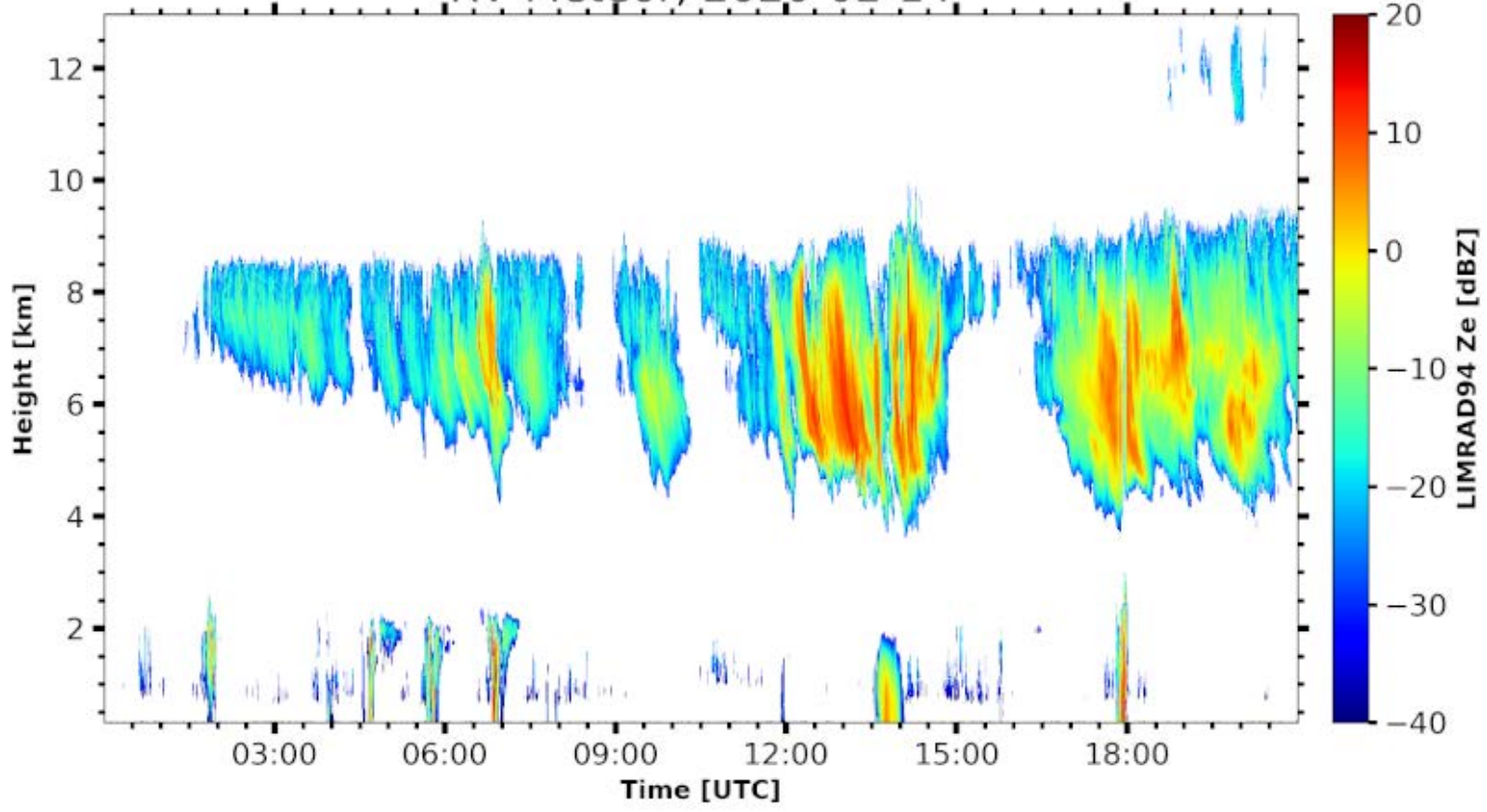
5. Outlook

We will reach the southern L2 point and turn around with regular CTD stops in two day we will be back in the north near L1 to retrieve the remaining two U E. Anglia gliders.



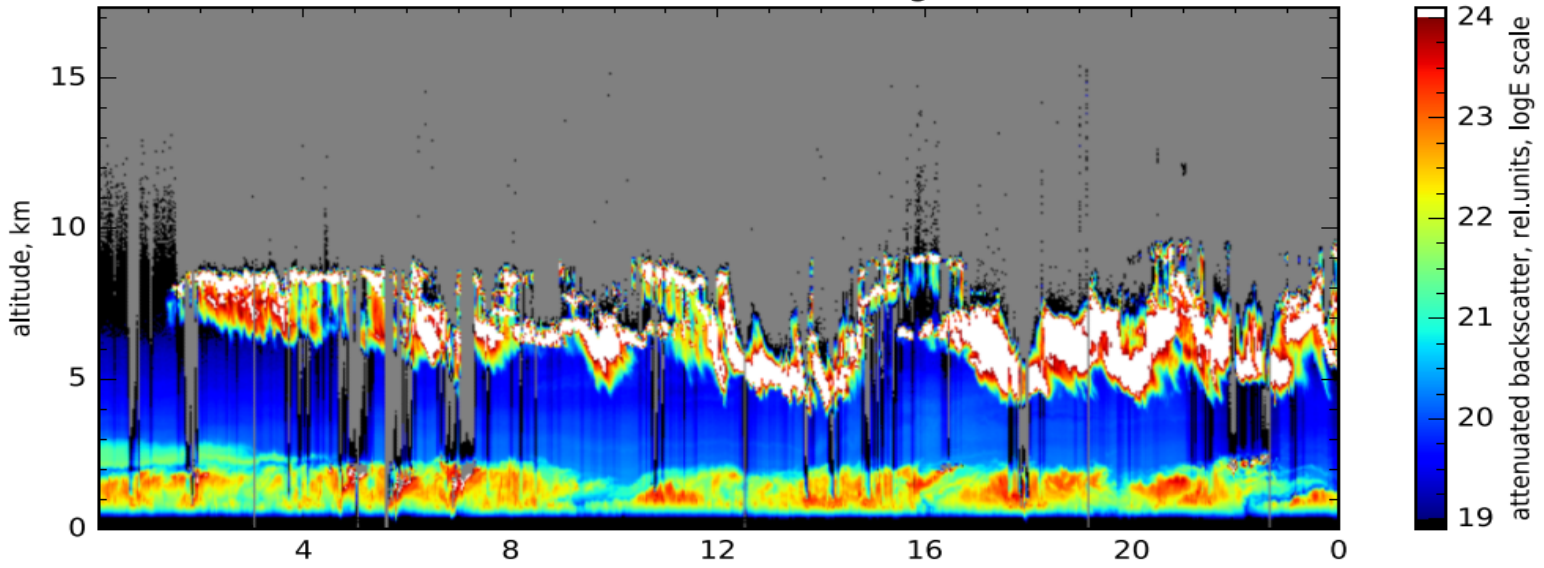
ocean profiling for the Jan 12 to 14 period

RV-Meteor, 2020-02-14

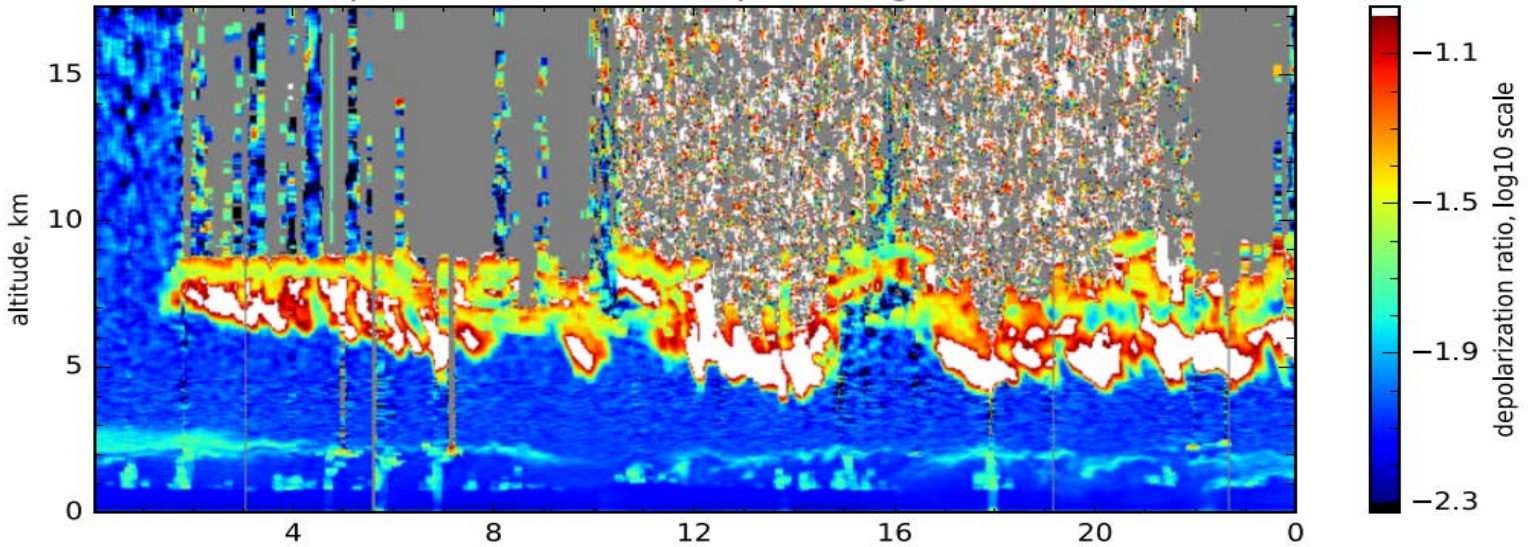


METEOR cloud radar and ceilometer data for Feb14

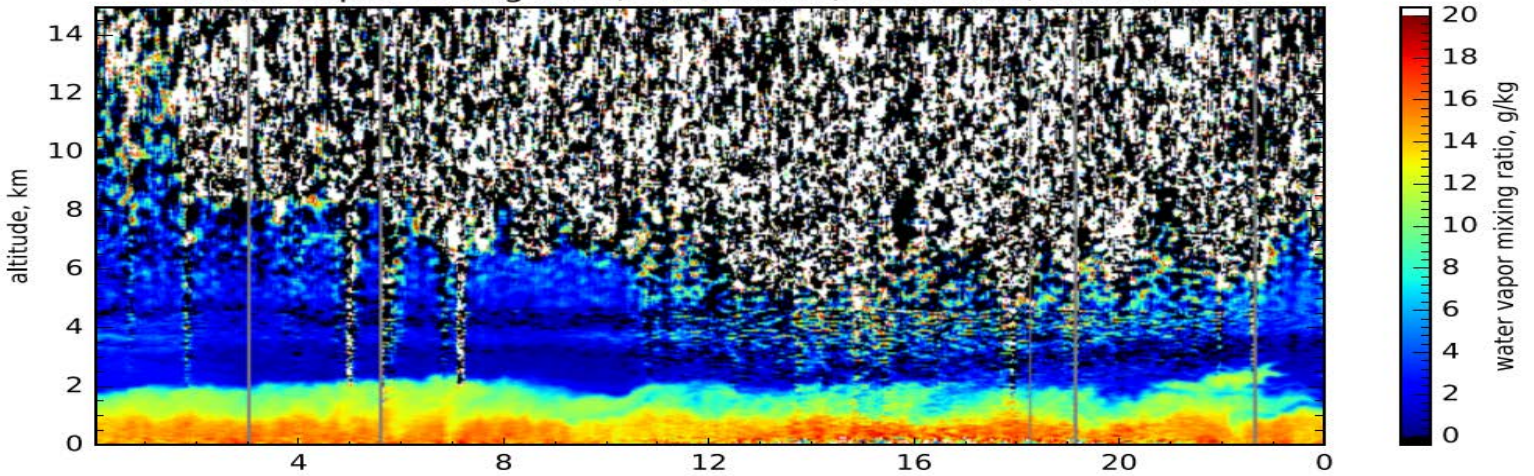
attenuated backscatter, 1064nm, far range, res.: 120s, 60m



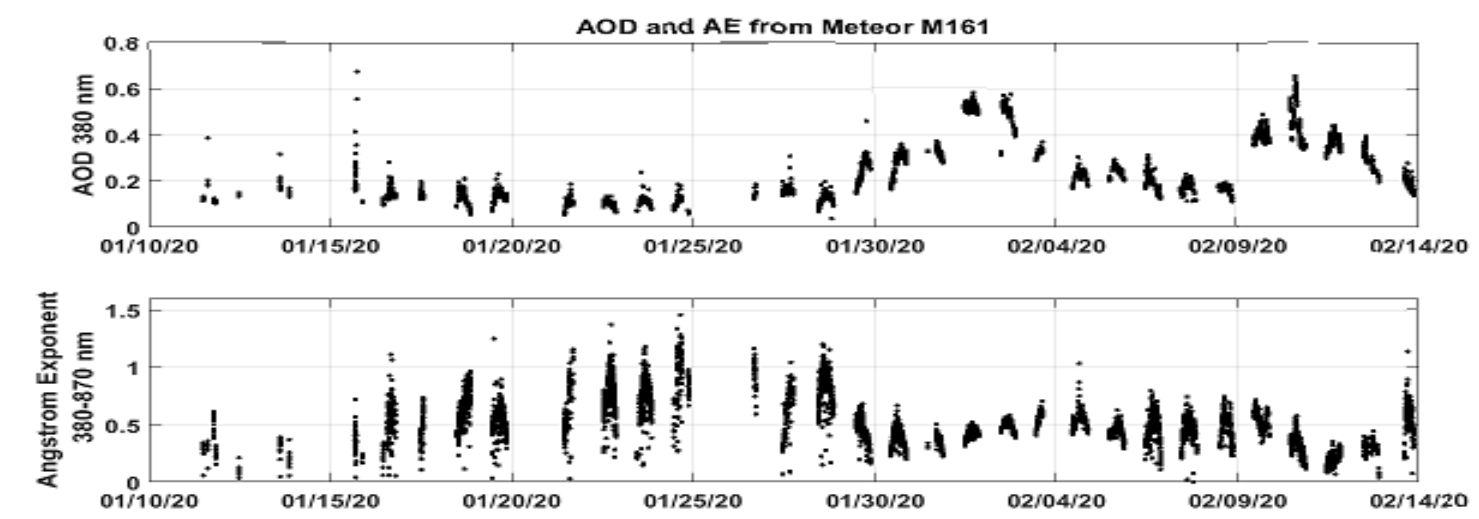
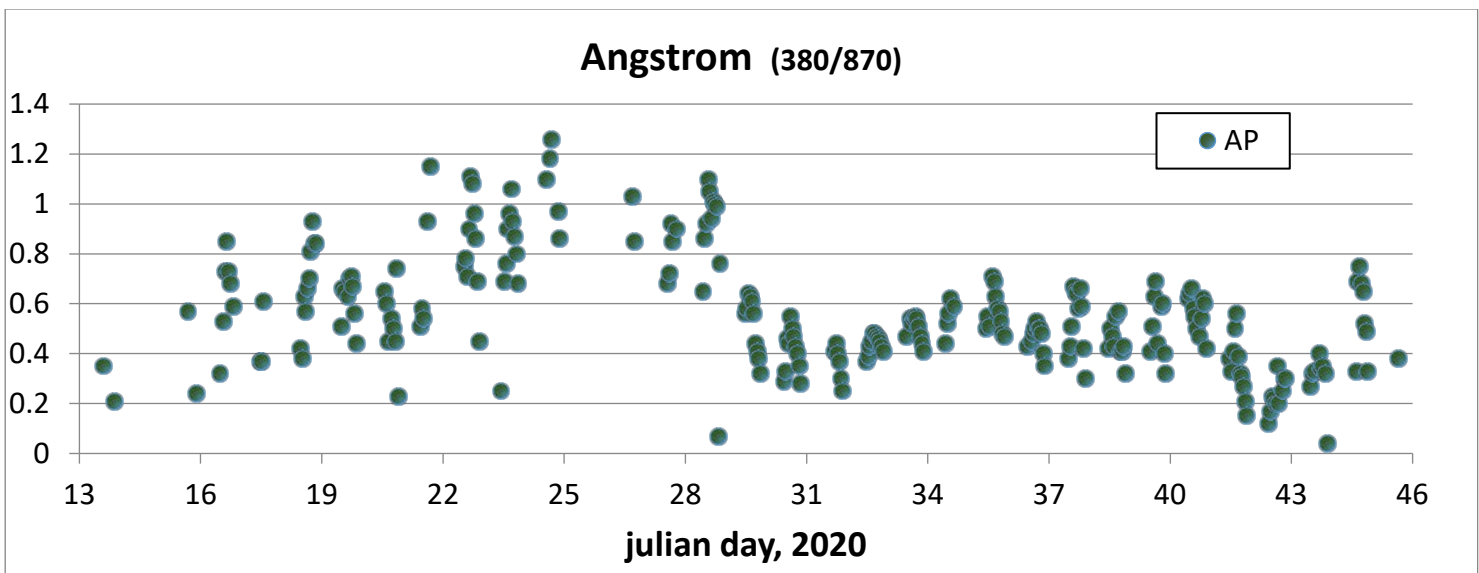
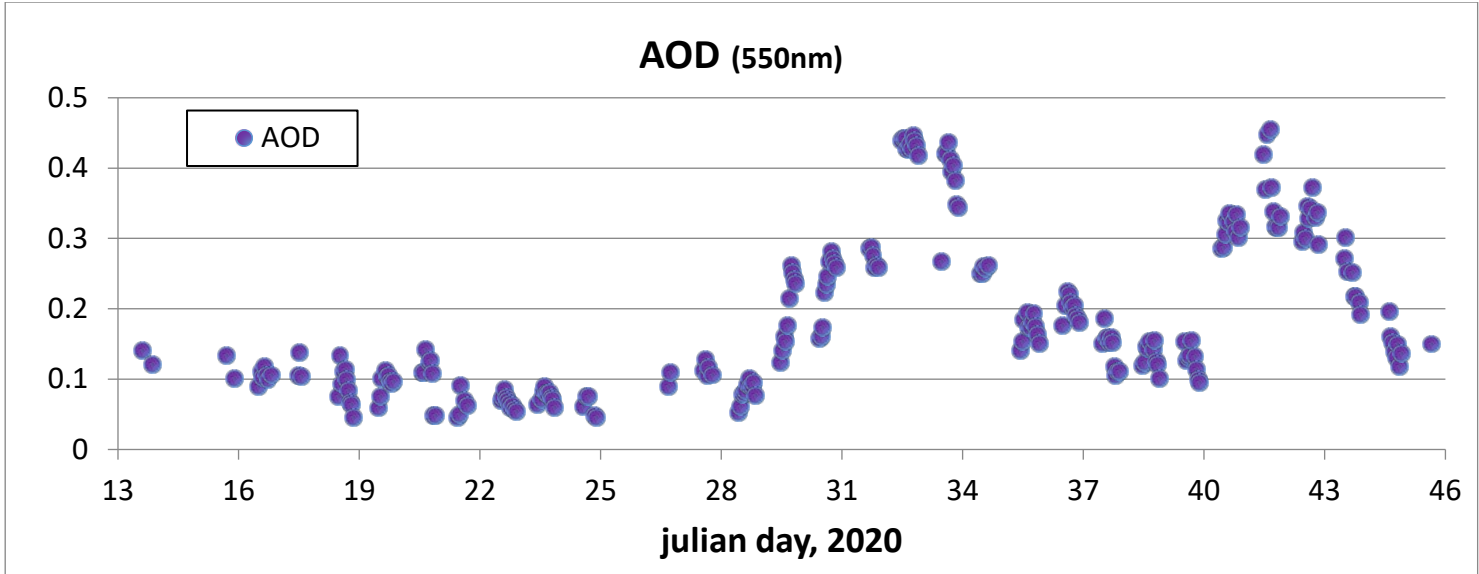
Volume linear depol. ratio, 532nm, complete range, res.: 600s, 60m-660m



Water vapor mixing ratio, FAR+NEAR, res.: 600s, 60m-540m



Raman-lidar data on Feb 14 (backscatter, depolarization, water vapor)



Aerosol amount (AOD) and size (Angstrom) data from Jan 13 to Feb 13: Hourly filtered data data (top) and all sampled data (without any applied filter, including data of poor orientation and data with cloud contamination)