

OPS-0129 (29 January 2020)

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(compiled 01.29. 14:00 LT)

1. Facility updates

- Local logistics:

- **ATR-42:** Only one of the 2 planned coordinated flights possible yesterday, due to technical issues. Take-off at 16:30 LT. Similar flight pattern as Sunday, with lags 2.5 km, at cloud-base height, sub-cloud layer and surface lag. All instruments worked well. Good day for Lidar measurements. Tomorrow short (4h) coordinated flight with take-off at around 07:00 LT. On Friday coordinated flight planned with take-off at 11:00 LT.

- **RAAVEN, BOREAL and Skywalkers:** reports of yesterday, plans for today:

Boreal:

4.5 hour flight with a first circle (R=16km) at 400m, second one at 100m and half of a third one at 700m and a vertical profile between surface and 1000m. Next flight planned for Friday with a take-off at 1200LT, but exact time for take-off organized with ATR and Twin-Otter

Raaven:

a morning (10LT->12LT) and an afternoon (14LT->16LT) 2 hour-flight with ~ 2km legs at ~400m and 20m ASL; sampling of information below clouds. Today day off, next operations on Thursday.

Skywalker:

Two flights with two UAVs at the same time.

1/ Morning (TO ~ 10:15LT for 1h15) did fly through a cloud but adaptive sampling not yet realized. Incident: stall during holding pattern related to orographic turbulence. Recovered aircraft in tree. All the instruments are ok.

2/ Afternoon (TO ~ 15:30LT) did fly two hypodromes of 2km long at 400m, 600m, 800m and 600m at the same time for the two UAs for intercomparison. Revealed the importance of putting the cloud sensor looking downward at 45° instead of sideward. This has been changed and the planes are ready for tomorrow. Next day of operation planned for today if cloudy in the morning

- **HALO:** Yesterday take-off 11:00 LT for coordinated flight with TwinOtter and ATR. Pattern: 2 times 3.5 dropsonde circles with excursion towards NTAS buoy. Radar calibration maneuver at the turning point of excursion. 73 of 74 dropsondes successful. 183 GHz radiometer and for some time IR-camera failed. Otherwise great flight. Ground-Day today. Next coordinated flight Thursday (4h) with race-track pattern over ATR pattern, GPM underflight and leg towards area with Saharan dust. Planned take-off 07:00 LT. 4 dropsondes planned.

- **Twin Otter:** Yesterday two coordinated flights with HALO and ATR. First take-off today at 09:30. Refueling around noon. Flight pattern similar to Sunday. Humidity sensor failed, all other instruments worked well. Plans: Can fly on Thursday, will fly when cloudy. If, then take-off at 07:00 LT. Plans to join coordinated flight on Friday, taking part in super curtain tbd.

- **WP-3D:** Return expected for Friday, next scientific flights possible on Sunday or Monday the earliest. 4 day flights (take-off 09:30 LT, nominal duration 8h), followed by 3 night flight (take-off 20:00 LT) remain. Day flights will focus on cloud micro physics, with higher dropsonde circles around Ron Brown. Coordinated flights also with inner HALO circle are possible for later flights. Plans to have PLANET available for the WP-3D. Last scientific flight possible on Feb. 10th.

- **BCO:** All systems are up and running. Construction work for PoldiRad finished, waiting for power. Measurements at Ragged point are all running as well.

- **L'Atalante:** Yesterday achieved the survey of Ring2 with a very regular but intense rhythm of observations. Ring2 found to be a "pizza-like" anticyclone. Waiting for the completion of R/V Maria S Merian of Ring3 located in French Guyana waters, just at the North Brazil Current (NBC) Retroflection to understand if NBC Rings are born as "pizza-like" anticyclones (at least in this season) or if the NBC rings separate in two different structures at the Suriname subsurface promontory. Last night were sailing eastward to sample the other half of Ring2.

- **S. Merian:** Launch of Cloudkite with advanced sensor package (MPCK+) successfully accomplished with sampling for 3-4 hours. Synergy between Lidar and Radar observations with in-situ Cloudkite defined. Continue upper ocean survey with uCTD/ADCP. Radiosounding every 12h (south of 9°N). Three biology casts at 3:30am. No Guyana EEZ permission given so far. Will survey the pancake eddy and deep eddy again and meet with L'ATALANTE and hopefully the saildrones at the northern eddy boundary to do joint surveys. Guyana permit still not issued. Interesting hermohaline staircases pattern.

- **Meteor:** A new attempt to get cloud-kite data over a longer distance. Regular CTD every couple of hours and launching radiosondes at 2.45, 6.45, 10.45, 14.45, 18.45 and 22.45 UTC. Stayed away from direct aircraft co-locations and rather focused on standard sampling on (or at least near) the 57.245W longitude between 12N and 14.5N. New track patterns will be tested in the next days, but long-term cloud-kite operations seem out of question in the designated Meteor area unless the wind increases or the instrument package is reduced. This night will reach L2, reach the most southern point of the track and head back in a northerly direction. No cloud-kite operations are scheduled, so will follow the 57.245W latitude to the north and then turn around again at the northern point. We continue with regular (ca 3 hrly) CTD and (4 hrly) radiosonde launches.
- **Ron Brown:** Left Bridgetown for a 16 day cruise. Plans are to sail towards 55.75 W, 13.9 N and deploys SWIFTS along the way. Will be stationary on this position (which is south of the line between the center of the HALO circle and the NTAS buoy) for a rest of the campaign and on return pick up the SWIFTS. Isotopes instruments are up now as well as the W-band radar.
- **Autonaut:** AutoNaut Caravela was launched Wednesday and was heading east, south of the island. PLANET shows position East of Barbados.
- **CloudKite:** see METEOR and Maria S.Merian reports

2. Plans

The outreach activities for presentations at schools in week 3 and 4 on Mondays, Tuesdays and Thursdays continue. Input suitable for age group 10-12 and 13-15 is still needed.

No seminar today at CIMH. Next seminar Friday in 1.5 weeks.

This weekend a symposium is planned with the title:

„From BOMEX to EUREC4A“ from Friday afternoon (starting 14:30 LT) to Saturday (starting 09:00 LT) at CIMH.

An additional outreach activity with site visits is planned for Sunday 14-17 LT.

(Site crews, please make sure the sites can be visited or please report if not possible!)

Plans for Movie Night for February 4th, location tbd.

Barbecue for tomorrow canceled. New attempt next week.

3. Issues

no issues

4. Flight Alert

Wednesday 29 January 2020

- no flights are planned.

Thursday 30 January 2020

- short flights (approx. 4h) with HALO and ATR, take-off 07:00 LT.
- P3 will not fly.
- Planes will be in the Alley between 07:00 LT and 11:00 LT!
- Contact Points tbd.

Friday 31 January 2020

- coordinated flights with HALO and ATR, take-off 11:00 LT
- Possible flight of Twin Otter, take-off 11:00 LT or 09:30 LT
- P3 will not fly.
- Planes can be in the Alley between 09:30 LT and 20:00 LT!
- Contact Points tbd.