

ER-2 #809 03/21/17 - 03/22/17

Aircraft: [ER-2 - AFRC #809](#) ([See full schedule](#))

Flight Number: 17-9020

Payload Configuration: AVIRIS-NG, CPL, CRS, EXTRAD, FECS, GCAS, LIP, S-HIS

Nav Data Collected: Yes

Total Flight Time: 6.7 hours

Comments: Takeoff at 1145 PST; Landing at 1825 for a 6.7 hour mission. Overall, the flight was a huge success. The instrument teams got an unexpected bonus when "Coach" flew over a line of thunderstorms in the San Joaquin Valley as the t-storms uplifted against the Sierra Nevada Mountain Range. Coach said he could see lightning flashes every 2 to 3 seconds. The instrument teams were ecstatic! The ER-2 took off late because after engine start, the airplane crew noticed the ER-2 losing seal pressure in the wheel well. When power was transferred back from engine to external power, all power shut down. This resulted in an INS failure and AVIRIS-NG shutting down. Coach went through the failure checklist, everything came back up without any fail lights. The wheel well seal was fixed, the engine was restarted, and everything was fine with the airplane and instruments. After a successful AVIRIS-NG NAV initialization, Coach went "thunderstorm hunting". Coach noted that the AVIRIS-NG Q8 fail light was still intermittent. The fail light would go out for several minutes then would start flashing again. Coach flew over a severe thunderstorm east of San Francisco, an area where a tornado warning was issued. He then flew 6 laps over the line of thunderstorms approaching the Sierra Nevada Mountain Range where lightning flashes occurred every 2 to 3 seconds. After the 6 laps, Coach noticed that all of the AVIRIS-NG fail lights were on. AVIRIS-NG would not restart after stepping through the "AVIRIS-NG Fail" checklist. Coach then flew over the ocean. There was good clean air over the water. The EXTRAD lines were completed including slow rolls over the water. After returning to the Edwards AFB airspace complex, Coach completed airplane maneuvers for the LIP instrument. The many maneuvers performed were for calibrating the many LIP instruments onboard the ER-2 airplane. Doing these maneuvers while in autopilot did not go well. Coach then flew the LIP maneuvers manually – much better results. Maneuvers included pitch up, pitch down with speed-brakes on and off, and 40 degree bank-angle rolls in both directions. Coach had to dodge clouds while performing the maneuvers. The LIP PI was very happy about the maneuvers completed. He expects a really good data set. After the first GOES-R flight, there were issues with the AVIRIS-NG, CPL, and EXTRAD instruments. The instrument teams are troubleshooting so all instruments will be ready for a possible flight Thursday 23 March. Greg Coach Nelson was the pilot.

Submitted by: Kevin Walsh on 03/22/17

Flight Segments:

From:	PMD	To:	PMD
Flight Time:	4.9 hours		
Log Number:	172009	PI:	Francis Padula
Funding Source:	Steven Goodman - NOAA - GOES-R Program Senior Scientist		
Purpose of Flight:	Check		
Comments:	Purpose: To conduct the first engineering check flight of the GOES-R instrument payload.		

From:	PMD	To:	PMD
Start:	03/22/17 00:00 Z	Finish:	03/22/17 01:05 Z
Flight Time:	1.8 hours		
Log Number:	172023 - Completed as of this flight.	PI:	Scott Janz
Funding Source:	Jassim Al-Saadi - NASA - SMD - ESD GEO-CAPE Program Scientist		
Purpose of Flight:	Check		
Comments:	Cold soak to verify GCAS heater mod performance.		

Flight Hour Summary:

	162009	172009
Flight Hours Approved in SOFRS		100
Total Used	0	103.9
Total Remaining		-3.9

172009 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
12/19/16	17-6007	Check	0.5	0.5	99.5	
03/21/17	17-9020	Check	4.9	5.4	94.6	

03/23/17	17-9021	Science	5.7	11.1	88.9
03/28/17	17-9022	Science	6.4	17.5	82.5
04/06/17	17-9023	Check	0	17.5	82.5
04/11/17	17-9024	Transit	4.7	22.2	77.8
04/13/17	17-9025	Science	3.9	26.1	73.9
04/16/17	17-9026	Science	7.8	33.9	66.1
04/18/17	17-9027	Science	6.2	40.1	59.9
04/20/17 - 04/21/17	17-9028	Science	7	47.1	52.9
04/22/17 - 04/23/17	17-9029	Science	5.9	53	47
04/27/17	17-9030	Science	5.3	58.3	41.7
04/29/17	17-9031	Science	7.9	66.2	33.8
05/07/17	17-9032	Science	5.4	71.6	28.4
05/08/17	17-9033	Science	9	80.6	19.4
05/12/17	17-9034	Science	7.7	88.3	11.7
05/14/17	17-9035	Science	7.8	96.1	3.9
05/17/17	17-9036	Transit	7.8	103.9	-3.9

172023 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
11/08/16	17-9004	Check	1.1	1.1	4.9	
03/22/17	17-9020	Check	1.8	2.9	3.1	

Source URL: https://airbornescience.nasa.gov/flight_reports/ER-2_809_03_21_17_-_03_22_17#comment-0

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Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

	162030	172023
Flight Hours Approved in SOFRS	6	
Flight Hours Previously Approved		6
Total Used	0	2.9
Total Remaining		3.1