

19900929HL-LPS

CARIBBEAN CLOUD CLUSTER

E.2 Lead Project Scientist (On-Board)

E.2.1 Preflight

- ☒ 1. Participate in general mission briefing.
- ☒ 2. Determine specific mission and flight requirements for assigned aircraft.
- ☐ 3. Determine from CARCAH or field program director whether aircraft has operational fix responsibility and discuss with OAO flight director/meteorologist and CARCAH unless briefed otherwise by field program director.
- ☒ 4. Contact HRD members of crew to:
 - a. Assure availability for mission.
 - b. Arrange ground transportation schedule when deployed.
 - c. Determine equipment status.
- ☒ 5. Meet with OAO flight crew at least 90 minutes before takeoff, provide copies of flight requirements and provide a formal briefing for the flight director, navigator, and pilots.
- ☒ 6. Report status of aircraft, systems, necessary on-board supplies and crews to appropriate HRD operations center (MGOC in Miami or FGOC at remote recovery location).

E.2.2 In-Flight

- ☒ 1. Confirm from OAO flight director/meteorologist that satellite data link is operative (information). *will send ASDL, WILL check with CARCAH / SEND RECCOS IF they are interested.*
- ☐ 2. Confirm camera mode of operation.
- ☐ 3. Confirm data recording rate.
- ☐ 4. Complete Form E-2.

E.2.3 Postflight

- ☐ 1. Debrief scientific crew.
- ☐ 2. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to the appropriate HRD operations center (MGOC or FGOC).
- ☐ 3. Gather completed forms for mission and turn in at the appropriate operations center. [Note: all data removed from the aircraft by HRD personnel should be cleared with the OAO flight director.]
- ☐ 4. Obtain a copy of the 10-s flight listing from the OAO flight director. Turn in with completed forms.
- ☐ 5. Determine next mission status, if any, and brief crews as necessary.
- ☐ 6. Notify the appropriate operations center (FGOC or MGOC) as to where you can be contacted and arrange for any further coordination required.

On-Board Lead Project Scientist Check List

9-29-90
Date 900929H Aircraft 42RF Flight ID 900929H1

A. Participants

HRD		OAO	
Function	Participant	Function	Participant
Lead Proj. Sci.	<u>M POWELL</u>	Flight Director	<u>P. BOGERT</u>
Cloud Physics	<u>NA</u>	Pilots	<u>LAYDEN / KENNEDY</u>
Radar	<u>P DODGE</u>	Navigator	<u>SEAN white</u>
Doppler	<u>" "</u>	Sys. Engr.	<u>Butch</u>
Photographer	<u></u>	Data Tech.	<u>George</u>
Omegasonde	<u>L Scharde (sp?)</u>	El. Tech.	<u></u>
AXB/T/AXCP	<u></u>	Other	<u></u>

Take-Off	Location	Landing	Location
<u>Start @ 160712</u>	<u>BLK</u> <u>25 47.7 80 17.3</u>		

B. Past and Forecast Storm Locations

Date/Time	Latitude	Longitude	MSLP	Max. Wind
<u>IP vicinity</u>	<u>20.5N</u>	<u>82.0W</u>	<u></u>	<u>25 kt</u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>

C. Mission Briefing

Fly N-S oriented racetrack pattern in cloud cluster in W. Caribbean. Will fly
just below melting layer ~12,000-16,000'. Leg lengths variable but ~160nm
spacing between legs ~30nm. 5-6 owl drops on inflow side, in clear, possibly between
cells in clear.

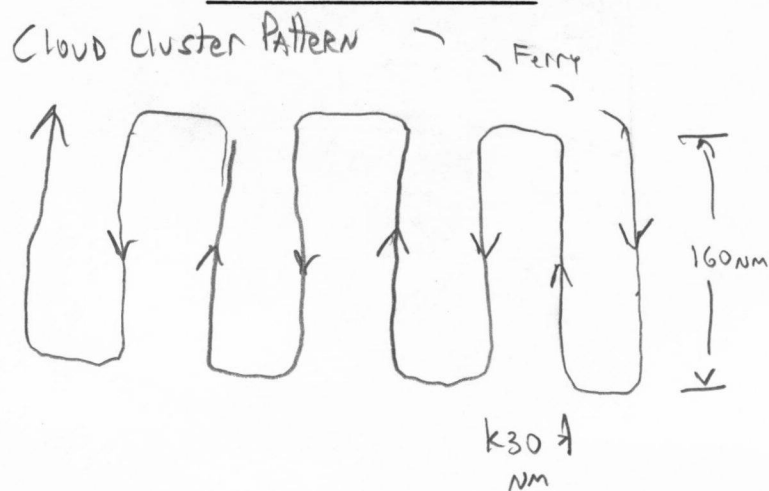
D. Equipment Status

<u>Equipment</u>	<u>Pre-Flight</u>	<u>In-Flight</u>	<u>Post-Flight</u>
Aircraft	✓		
Radar	TRACK BALL NOT RESPONDING		
Cloud physics	NA		
Data system	OK		
Omegasondes	OK		
AXBT/AXCP	NA		
Doppler	SEE RADAR		
Photography	M. Powell, P. Dodge + LASS HAS CAMERAS		

REMARKS: MAY have to run RADAR in "STATUS" mode: Tail - vertical incidence only
LF - can't after tilt (see RADAR Notes)

Based on TO sounding melting layer @ 600mb
1648 MUST STAY OUT OF CUBAN AIRSPACE NO permission to fly over
MUST STAY S OF 20N will Adjust pattern accordingly SEAN will call Nth turn pts.
1701 CAN'T get tape drive to work for RADAR
1706 PGB SFC θ_e is 360K @ Kingston Jam. KJY Radio msg.
CZL - MIA 590um
1734 PGB Freezing LUL @ Kingston @ 580mb ~500' higher than MIA
WE will send ASDA DATA despite no one @ CARCATH
1749 Large drop in TD to ~-30 as we approach western edge of the cloud shield
from sat. pic.
1814 on W edge of convective buildups (top left) RA = 5100m WD ~ 210° WS 16KA θ_e 321K
1821 Descent to 15,000ft (reminder from NAV. in 50nm)
1831 CAN'T see Wm cirrus edge still @ -2C @ 15,000' will descend further to 13,800'
1836 RA = 4175 TA = 1.3 we will operate @ this alt. Td up to -1.0 (in cloud now)
1840 THRU RAIN ALL'S
1848 IN CLOUD TD looks good now, CAN'T see base
1853 Turn to 095 Hdg, Td not saturating in cloud + rain, mirror may be too hot now
generally in stratiform rain
1904 θ_e = 335 in strat. rain
1914 we have passed thru > 30kt winds perhaps vorticity center near 20N 85W
1922 Turn to S 20N 83W
1924 banding on nose RADAR SW-NE
1928 θ_e 335 LF, Tail no recording available, no display now passing to Rt. of N-S line of cells
1932 Frame 24, 25
1936 Frame 26 will try DDW Drop before the cell in Frame 26 in clear area should be typical of
inflow to cells to north below non precip. anvil cloud

E. I. Proposed Flight Pattern (sketch or designate by number)



Location Options

1. Gulf of Mexico
off Pensacola, Mobile, AQQ

2. W Caribbean
SoP Cuba
E of Honduras

E. II. Actual Flight Pattern

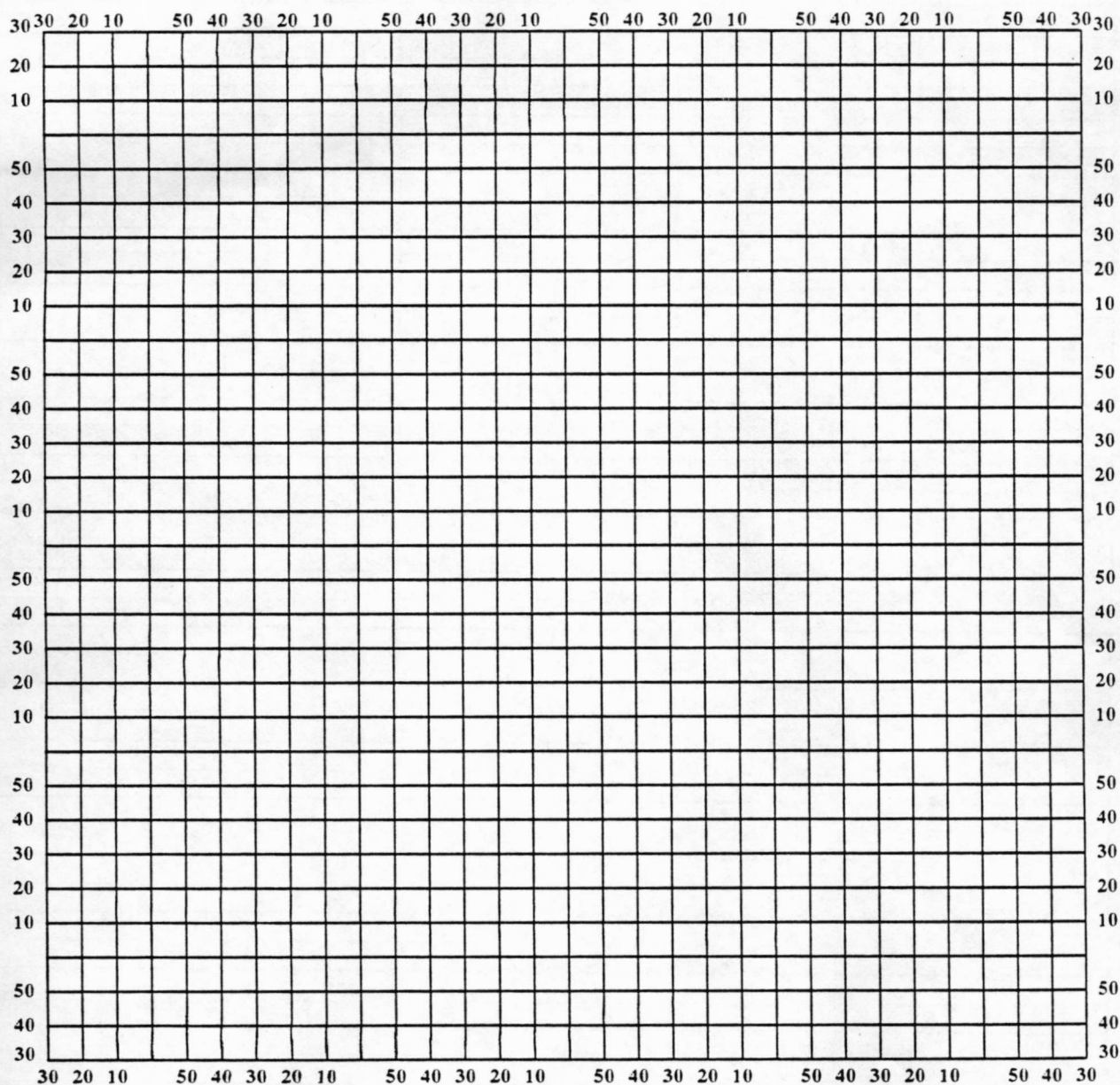
Attached

chose option #2. W Carib.

Hurricane Recco Plotting Chart

True at 25° Latitude, in Degrees and Minutes of ϕ and λ .

Date _____ Longitude _____ Observer _____



Note: Label full degrees according to location of flight area.

Lead Project Scientist Event Log

Date 9-29-90

Flight 900929H

LPS POWELL

Time	Event	Position	Comments
1942	ODW launch in clear		
1949	Turn to W for 30 NM leg	Frame 26 to LHS just before turn	
1955	Turn to N for long leg	leg to N. Limit	
201630	TA=2.3 TD=0.6		
2023	turn to W will extend leg to ~45 NM to return adjacent to N-S oriented band on LF radar		
2029	Phil observes ship below		
203210	Turn to 180° TRK to Pass to L of band		
2035	in rain $\theta_e = 336$		
2038	in rain from overhanging anvil		
2042	Still in Anvil rain $\theta_e = 337.1$ T=2.1 TD=0.9		
2043	Anvil rain + scud cloud		
2052	Below well defined anvil cloud only lite rain falling (H. haze) along E side of band		
2055	Frame 28 looking ~20° to left of band @ anvil cloud + towering cu to SE		
2058	Shadows of rain falling through anvil $\theta_e = 334.3$		
2100	Frame 29 looking ahead 10° to rt at anvil + cu		
2112	Turn to W		
2113	ODW drop in cloud some cu below $\theta_e = 333.3$		Tail radar turned off (can't be recorded)
2118	Drop went bad ^{3rd} will try another after turn	frames	33.34 looking RTH window AT S + W band edges respectively
2119	turn to 360 N		
212000	ODW drop some anvil rain ahead some low scud		whitecaps on sfc
2125	in strat rain on W side of band		
2128	cells on LF are on W side of band		
2131	in cloud lighter rain		
2139	$\theta_e = 338$ in conv cells	last ODW launch OK	
2148	We will extend cross track leg to NW so we will be tracking Nat last leg		
2151	Winds indicate possible circulation center near 22.3 85.0 20°20' 89°54'		
2154	ws down to 2 kts		
2221	TRK 182 in strat rain		
2232	in strat rain PK WIND 34 kts @ 2230		
2236	$\theta_e = 340$		
2242	Out of soup beneath anvil		
2245	ODW drop thin strat layer below RH=100% will try another		
2253	turn to W		
2256	ODW out only scattered low cu below 4/c		
2300	Low level cloud streets oriented SW-NE	Frame 36 @ 2303 out L side of cloud streets	
2305	turn to N too much cloud for another ODW		
2318	N in strat rain T, TD = 2.0		
2320	Approaching band		
2329	N side of SW-NE band winds shift to N @ 101 kt		
2339	in clear below anvil just above stratow tops lumpy	radiation cooling instability & shutdown to W	
2343	winds calm again 2 kts		
2344	in clear can see horizon to L		

Pattern ended at ~22 N 87 W

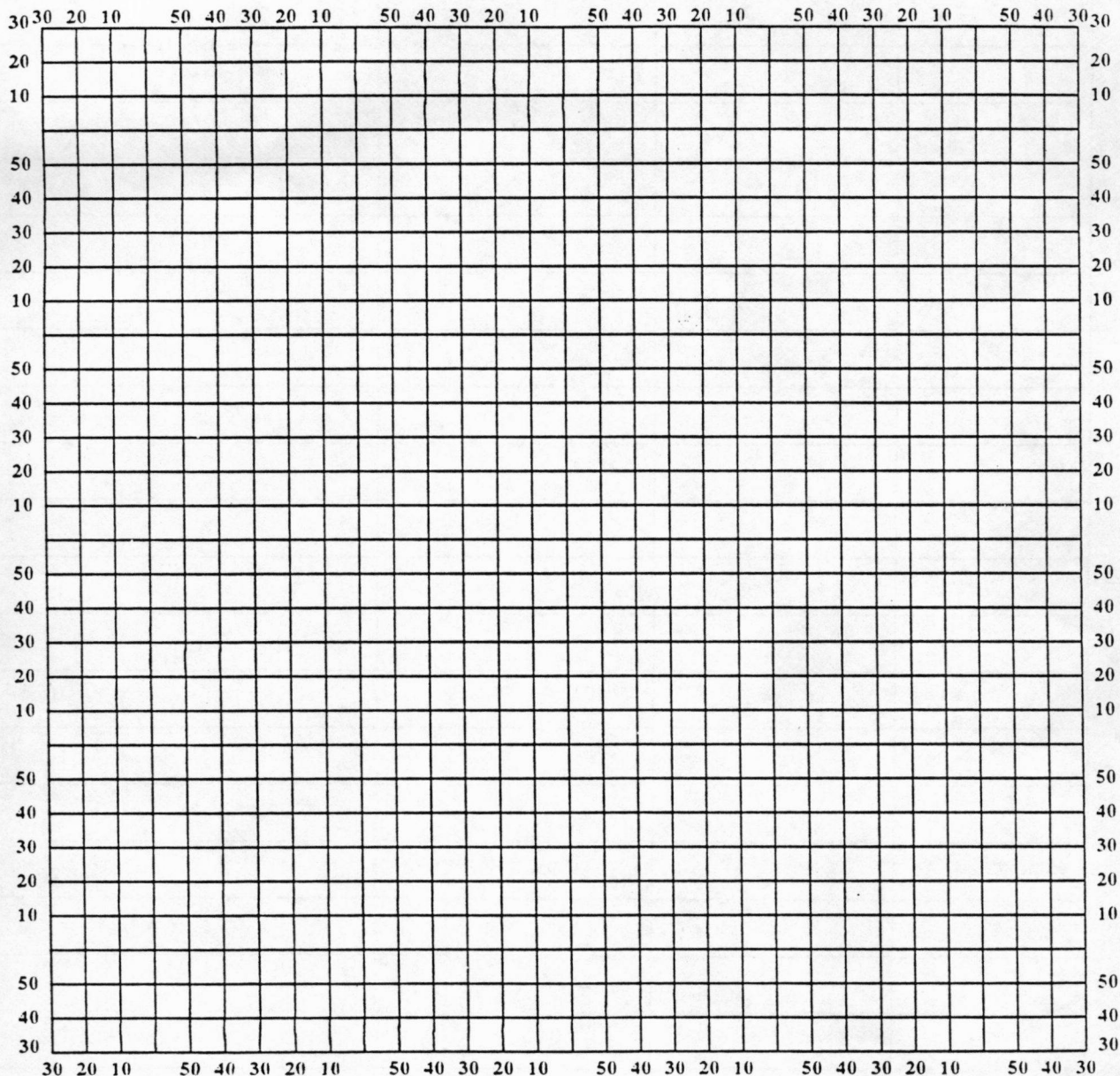
0144 LANDED in MIA

0147 Block time LAT=25 51.6 LON=80 17.3

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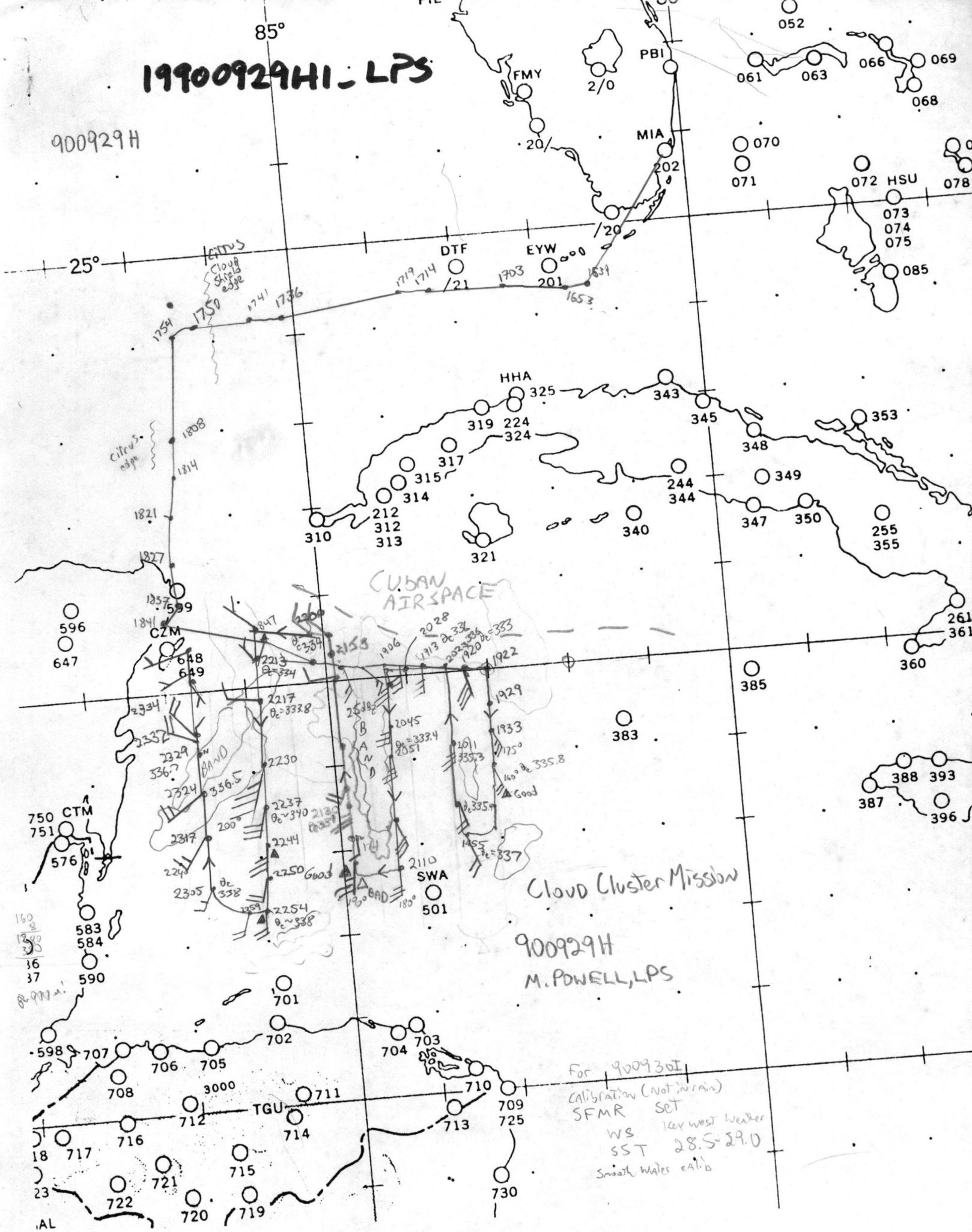
Note: Label full degrees according to location of flight area.

Lead Project Scientist Event Log

Date _____ Flight _____ LPS _____

[illegible]

900929 H



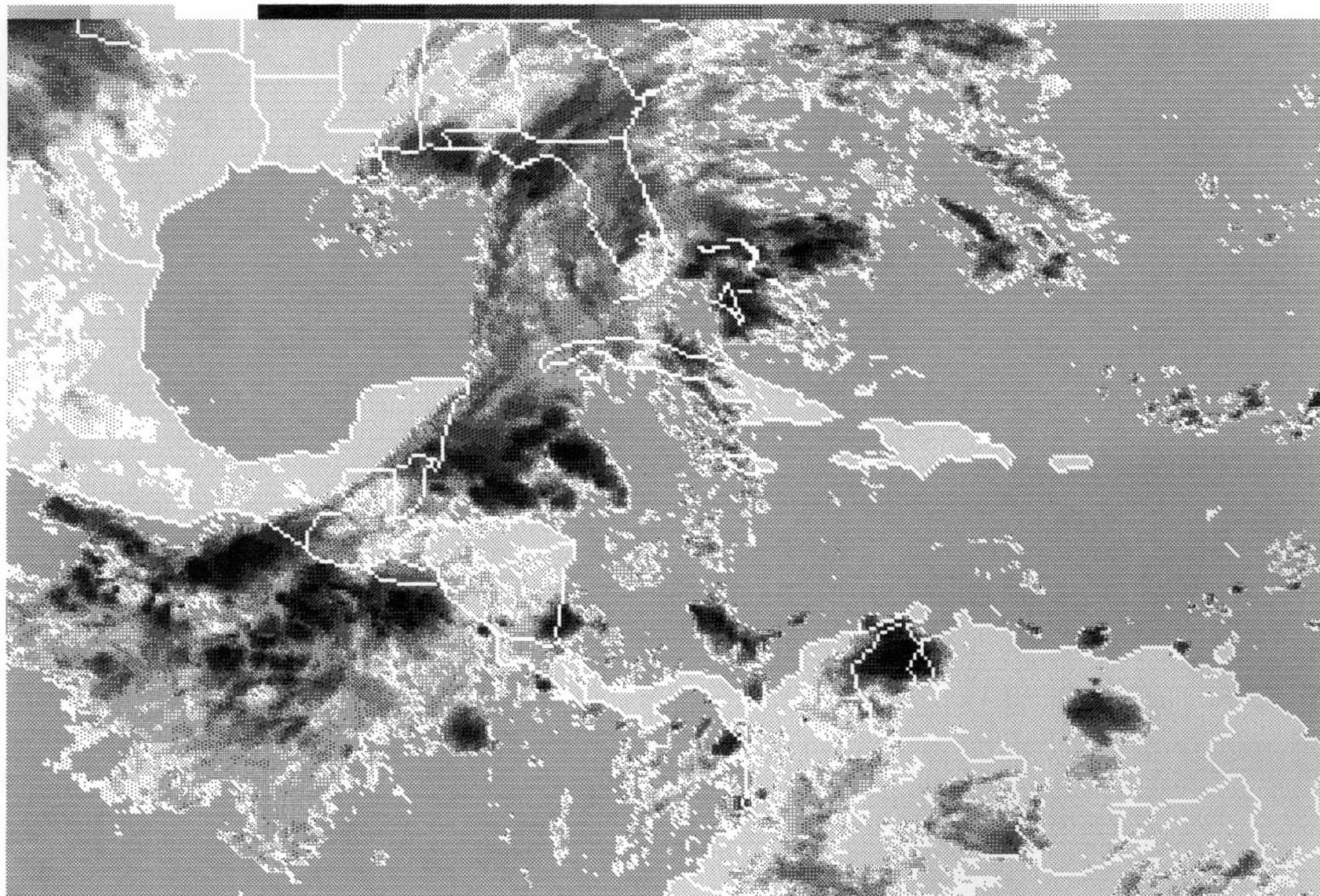
+SUPSAT HURR 80

SUPSAT image printed by "WX-View" from Robertson Software.

U539 12:00(12)GMT 29-SEP-90 SUPERHURR COPYRIGHT WSI CORPORATION

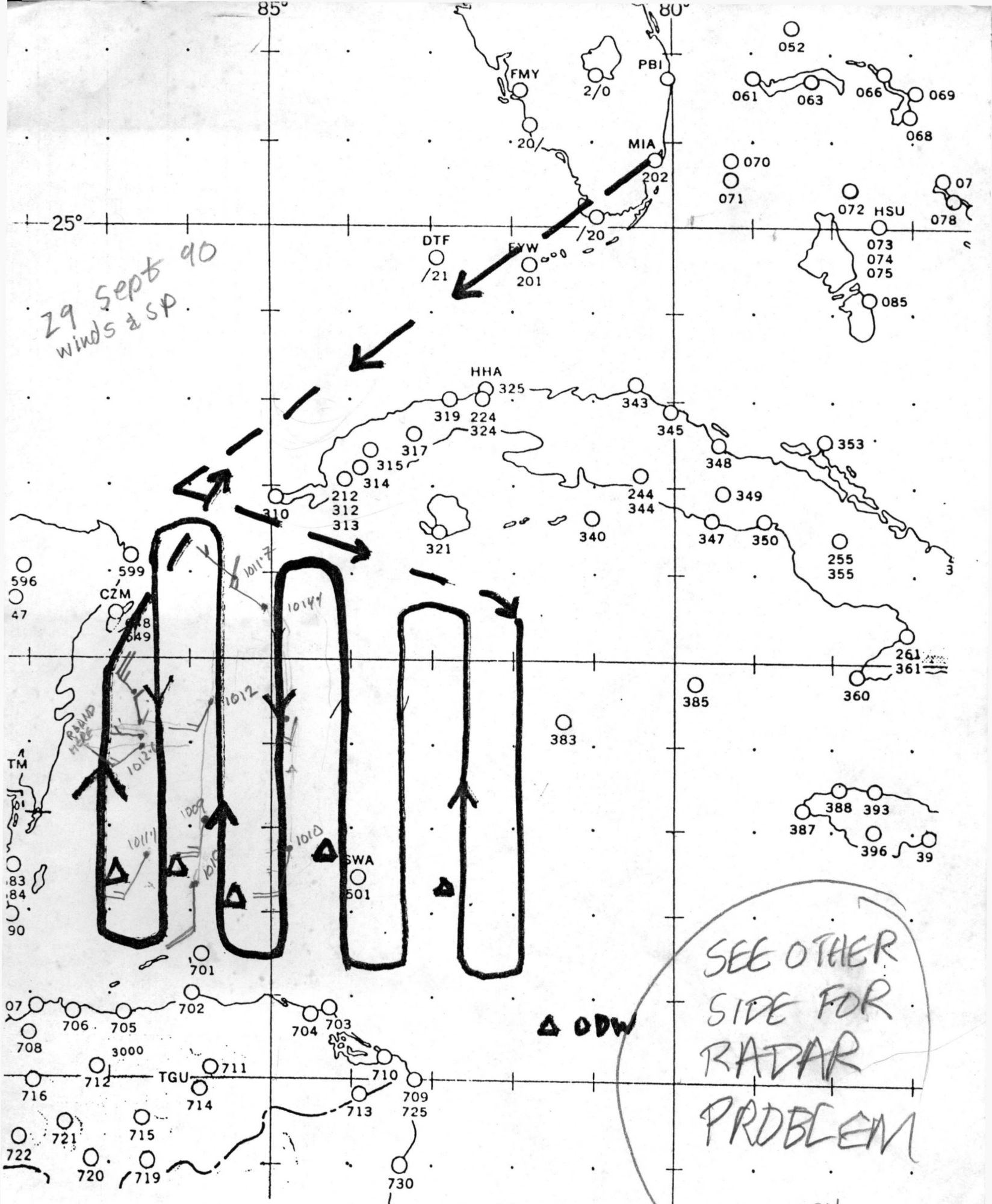
00

Supsat product levels 0 thru 15 are shown as ...



900929H

29 Sept 90
winds & SP.



SEE OTHER
SIDE FOR
RADAR
PROBLEM

Δ ODW

4174
6178

900929H1

I didn't want to waste a radar form, so
I'm writing here.

NOAA 42RF

We collected NO radar data because
the track balls didn't work at any
station. We could OPERATE THE RADARS,
using the STATUS program - but the SIGMET
software guys forgot to include an option
to start or stop the tape drives! According
to SIGMET manual we could get around
this by editing the data file - but we
couldn't do that because

① The disc is full so EDIT won't run
and

② Data files (DAHURR1, etc) are UN-
commented lists of numbers.

Neal and Dan tried for hours to get a fix,
but no-go (this included calls to T. Schricker
and J. de Gran Ruit over HF...). So, a rare
problem - but one SIGMET software should have
been able to handle!

MORE NOTES

IN RADAR NOOBOOK

Peter Dodge