

E.2 Lead Project Scientist

E.2.1 Preflight

- HAVE PERHAPS*
- 5:30 am*
- No*
- W*
- 3¢*
- ☒ 1. Participate in general mission briefing.
 - ☒ 2. Determine specific mission and flight requirements for assigned aircraft.
 - ☒ 3. Determine from field program director whether aircraft has operational fix responsibility and discuss with AOC flight director/meteorologist unless briefed otherwise by field program director.
 - ☒ 4. Contact HRD members of crew to:
 - a. Assure availability for mission.
 - b. Review filed program safety checklist
 - c. Arrange ground transportation schedule when deployed.
 - d. Determine equipment status.
 - ☒ 5. Meet with AOC flight director and navigator at least 3 hours before take-off for initial briefing.
 - ☒ 5. Meet with AOC flight crew at least 2 hours before take-off for crew briefing. 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).
 - ☐ 7. Before take-off, brief the on-board GPS dropsonde operator on times and positions of drop times.
 - ☒ 8. Collect "mess" fee (\$2.00) from all on-board HRD flight crew members.

E.2.2 In-Flight

- ☐ 1. Confirm from AOC flight director that satellite data link is operative (information).
- ☐ 2. ~~Confirm camera mode of operation.~~
- ☐ 3. Confirm data recording rate. ☒
- ☐ 4. Complete Form E-2. *But how can I check this until I have completed this list which requires that I check this*
- ☐ 5. Check in with the flight director to make sure the mission is going as planned (i.e. turns are made when they are supposed to be made).

E.2.3 Post flight

- ☐ 1. Debrief scientific crew.
- ☐ 2. Report landing time, aircraft, crew, and mission status along with supplies (tapes, etc.) remaining aboard the aircraft to MGOC.
- ☐ 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 AOC flight director.]
- ☐ 4. Obtain a copy of the 10-s flight listing from the AOC flight director. Turn in with completed forms.
- ☐ 5. Determine next mission status, if any, and brief crews as necessary.
- ☐ 6. Notify MGOC as to where you can be contacted and arrange for any further coordination required.
- ☐ 7. Prepare written mission summary using form E-2 p.3 (due to Field Program Director 1 week after the flight).

On-Board Lead Project Scientist Check List

Date 09/18/2003 Aircraft 42 Flight ID 030918H

A. Participants:

HRD		AOC	
Function	Participant	Function	Participant
Lead Project Scientist	<u>P. CHANG/P. DODGE</u>	Flight Director	<u>PAUL FLAHERTY</u>
Cloud Physics/BT	<u>R. BLACK</u>	Pilots	<u>Kennedy, Strong,</u>
Radar	<u>J. GAMACHE</u>	Navigator	<u>Jr. ADLER</u>
Workstation	<u>P. LEIGHTON</u>	Systems Engineer	
Photographer/Observer		Data Technician	<u>S. McMillan</u>
Omegasonde GPS	<u>P. LEIGHTON et c</u>	Electronics Technician	
AXBT/AXCP Guest	<u>D. Estevan (UMASS)</u>	Other	

Chris Muncie - Navy Times reporter

Take-Off: 120246 Z Location: Mac Dill
 Landing: 2150 Z Location: Mac Dill Number of Eye Penetrations: 7

B. Past and Forecast Storm Locations:

Date/Time	Latitude	Longitude	MSLP	Maximum Wind

C. Mission Briefing:

Combined Ocean Winds, Hurricane Landfall
experiment.

D. Equipment Status (Up, Down, Not Available, Not Used)

Equipment	Pre-Flight	In-Flight	Post-Flight
Aircraft			
Radar/LF			
Radar/TA (Doppler)			
Cloud Physics			
Data System			
Omegasondes			
AXBT/AXCP			
Workstation			
Videography			

REMARKS:

Equipment worked very well. Crew accommodated many plan changes, last minute call for drops,

WASH DC ZON SR1

NEW BERN SR2

HAT

MORRIS ATLANTIC (DOGS)

Land fall at 12,000
(AF will be at 10)

41002 IP, desc to 7,000'

OCEAN WINDS

100 nmi

HAT

MHE

BTS

41002

E (II) Actual Flight Pattern

WX13A

030918H (1)

OCEAN WINDS / 9 ISABEL LANDFALL

T/D: 120246

1349: starting descent to 7,000' as we approach IP (41002)

1345 @ 250 KM - some convective bands SW side
almost 200 KM from radar center

1354 ~~SFMR~~ SFMR 26 m/s 200 KM S&S at 32.28, 75.63

1357 41002 - continuing E for 20 mi (WRAP)

1401 32°16' 75°0' Turn to head for eye

1404 JG notes EYE is 60 nmi in diameter!

1408 Wedge on for LF

1415 - AF will in eye center sometime as us, so we may circle

① 1419 DROP 33.44, -75.26

② 1422 " 33.66 -75.34 35 m/s SFMR

③ 1423 33.74 -75.36

1431 RB/eyewall already on outer banks -
so we will drop sondes, BT near DSLN7

1436 BACK on Sector LF

④ 1439 Drop 34.91 75.61 SFMR 40 m/s (NO WINDS)

⑤ 1440 35.0/75.61 Drop (JM said "peaked at 50 m/s") SRF 48 m/s

1442 35.15, 75.61 TURN

⑥^{vs} 144346 SONDE/BT 35.18, 75.57 (My Mistake) 32 m/s

⑦ 144614 sonde (SFMR 37)

headed back into "eye"

(2) 030918H

145211 34°44' 75°36' Turn to track || coast

1459 - eye is f*** huge

150313 SONDE (SW eyewall) SFMR 32 m/s

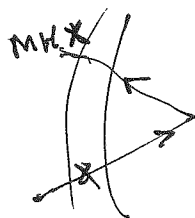
sonde
36 m/s

1504 " 34.25 76.54 SFMR?

150710 " 34.17 76.70

1510 Turn FLT LVL 67 kts, dir 0
34°03' 76°56'

1514 will do to get to drops for MAX
stop site



1518 Sonde inland 34°13' 76°31' FLT level 75 kts, 340
SFMR 35 m/s BOUNCY 4.8 m/s ↑

1524 turned to track 332 at 34°20' 76°03

1527 looks like eyewall is over land by MAX

~~1531~~ 153133 drop 34°42' 76°16'

1536 turn to track 40 at 34°28' 76°04'

1538 strong cell 30 nmi NE of US - at remnant
of inner eye wall? Maybe Gulf Stream

1546 SFMR 39 m/s FLT level 80 kts / 143°

154811 SMD/BT 35°01' 75°25' 42 m/s SFMR

154956 drop 35°06' 75°19'

NE side has strongest winds so we ~~can~~ working that

(3) ~~1554~~ 0

1554 turning again to head SW back in at
35°32, 75°06

NOTE: We got Tom Shepherds
100th G pene today

1601 115 KTS flt & land

1605 34°40 75°53 PC drop inbound

1609 Turn to track South to check out rainband.
34°42' 75°50'

1619 2 sondes dropped S rainband

1623 turn to H North through "

1628 SND/BT - BT no good

1636 SND 34°32 75°75 27.6 - 27.8°
BT (DEEP WAT)

1644 we are maneuvering around to get through the
heaviest precip

1649 DROP 34°5 75°69° in heaviest rain of the day?
SFMR RR 16 30 m/s
16-19

1705 plan is to head NE
a while - and then up to 44

170559 sonde 35°06 79°53'

170647 " 35°08 75°29'

50
m/s
SFMR

34°51' 76°20'

1634 USAF
FIX

1723 we will do a leg of 3 sondes DUC → 44014

172527 drop near DUC SFMR 30 m/s

172946 sonde 36°19' 75°26'

(4) 030918H

1744 - so we will climb to 12,000 pressure
make a run to Josh, then New Bern, possibly
We ended up going downwind which

1758 now climbing to 12000 ^(Pressure Alt) 35.7

1811 SFMR 43 m/s 35°13' 75°20' 74' 85
LF in sector - they want to see how IWRAP does
over land

181051 lat BT 34°38' 75°69' 26.6°-27°

1829 can't head inland from here so heading SW
(34°41' 76°06')

1832 now we are turning to get closer to beach
SW

183523 Sonda 34°38' 76°27'
SFMR off - too close to shore

so we are headed for New Bern, dBZ look OK.
Some discussion about new guidelines for overland -
which basically prohibit eyewall penetrations over land.
We are still flying against the wind

1844 - doing a 360 so can get sonda
ready to drop near New Bern 35°02' 77°09°

~~184748~~

(5) 030918H

1848913

Sonde in New Bern Shipping Channel
~~184~~ 35°02', 76°96°

why did I pick an
upwind circle?

185059 turn 35°09', 77°05° to Head for
Washington. (Then back to G, then

~~185754 35°52' 77°05'~~ Head S over Atlantic)

185754 35°52' 77°05° turn to Head E from
Washington

1903 32°27' 76°35' ~ cbr (a t/s)

1908 just passing through E eyewall ~~35~~ 35°22' 76°12'

1910 92 kts flt level

191124 Sonde in the sound 35°32' 75°97'

we'll try one more over Atlantic airfield

Not looking
so good

NO Winds

OH WELL

has PTH

192713 34°93' 76°23° SONDE
at Atlantic

(landed 3

and we will try last sonde SW of Atlantic Beach

1932 SFMR 32 m/s still at 34°71' 76°65°

193748 34°61' 76°78° SONDE for Atlantic Beach

site ~ And CLIMB/TURN to head home

(6)

03 09 18 H

No winds, probably, on the last sonde, either. बै गई॥

TAKE 1/8 step 2006

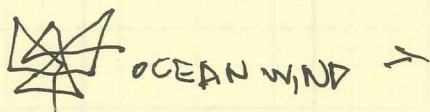
LAND 2150 UTC MacDill

Mission Summary
Storm name
YYMMDDA# Aircraft 4_RF

Scientific Crew (4 RF)

Lead Project Scientist _____
Radar Scientist _____
Cloud Physics Scientist _____
Dropwindsonde Scientist _____
Boundary-Layer Scientist _____
Workstation Scientist _____
Observers _____

Mission Briefing: (include sketch of proposed flight track or page #)



Mission Synopsis: (include plot of actual flight track)

Ocean winds, then upwind box hitting
1/2 sites ...

Evaluation: (did the experiment meet the proposed objectives?)

Problems: (list all problems)

1 lost track of center → upwind radar racetracks
instead of downwind - so only 1 pass completed.

Isabel 030918 H i 18h1, ram
t 18h1, tvk

		comp 1	1418 - 1442	9	*
56314	15:38:34	comp 3	1525 - 1545	9	*
68550	19:02:30	comp 6	1850 - 1912	9	*
		comp 2	1445 - 1515	9	

~~1600~~ ~~1622~~
comp 4 1555 - 1625 9

comp 5 1640 - 1707

19
str
1^c
at
19
no
ba
19
c
21
fo
21
or
20

A

m

lv

2

21

he

21

21

~~03040~~ 030918H 70.
H. Isabel Landfall mission

1355 - Approaching center from directly S of
220 km out. Congaline outer
eyewall kind of structure. E
Innermost complete eyewall
from this distance is 120 km across.

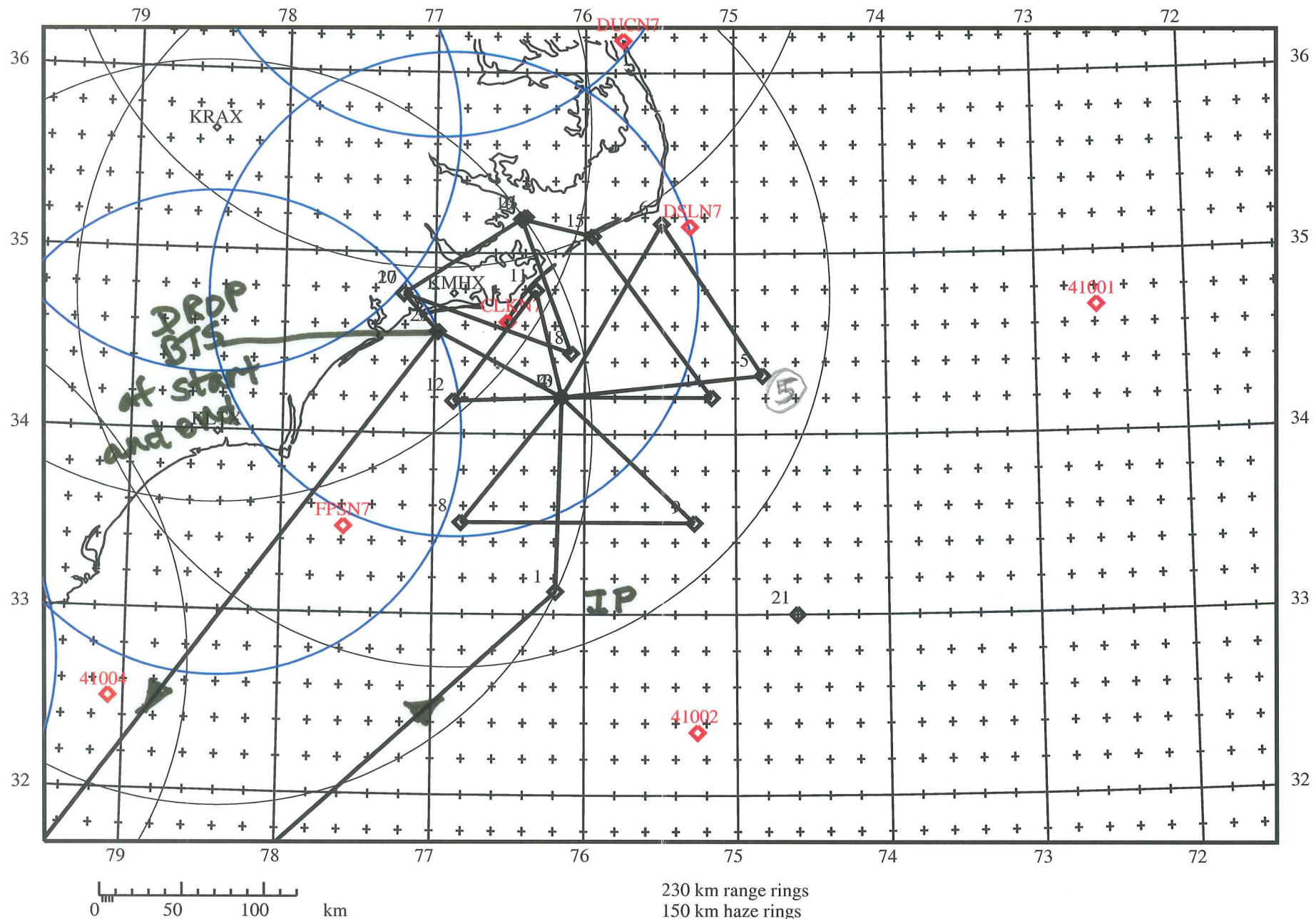
LP Reflectivity may be low. We'll
have to see as we get closer.
TA REF LOOKS GOOD + 57/1006
40+ DBZ in melting band.

Wind spikes in TA Ref / Vel

15 3744 - See what looks like
portal inner eyewall with
diameter 30 nm.

NOTE First part of flight at 7,000'
Then climb to 10,000' for overland

Center Lat: 34.00 Lon: -75.50

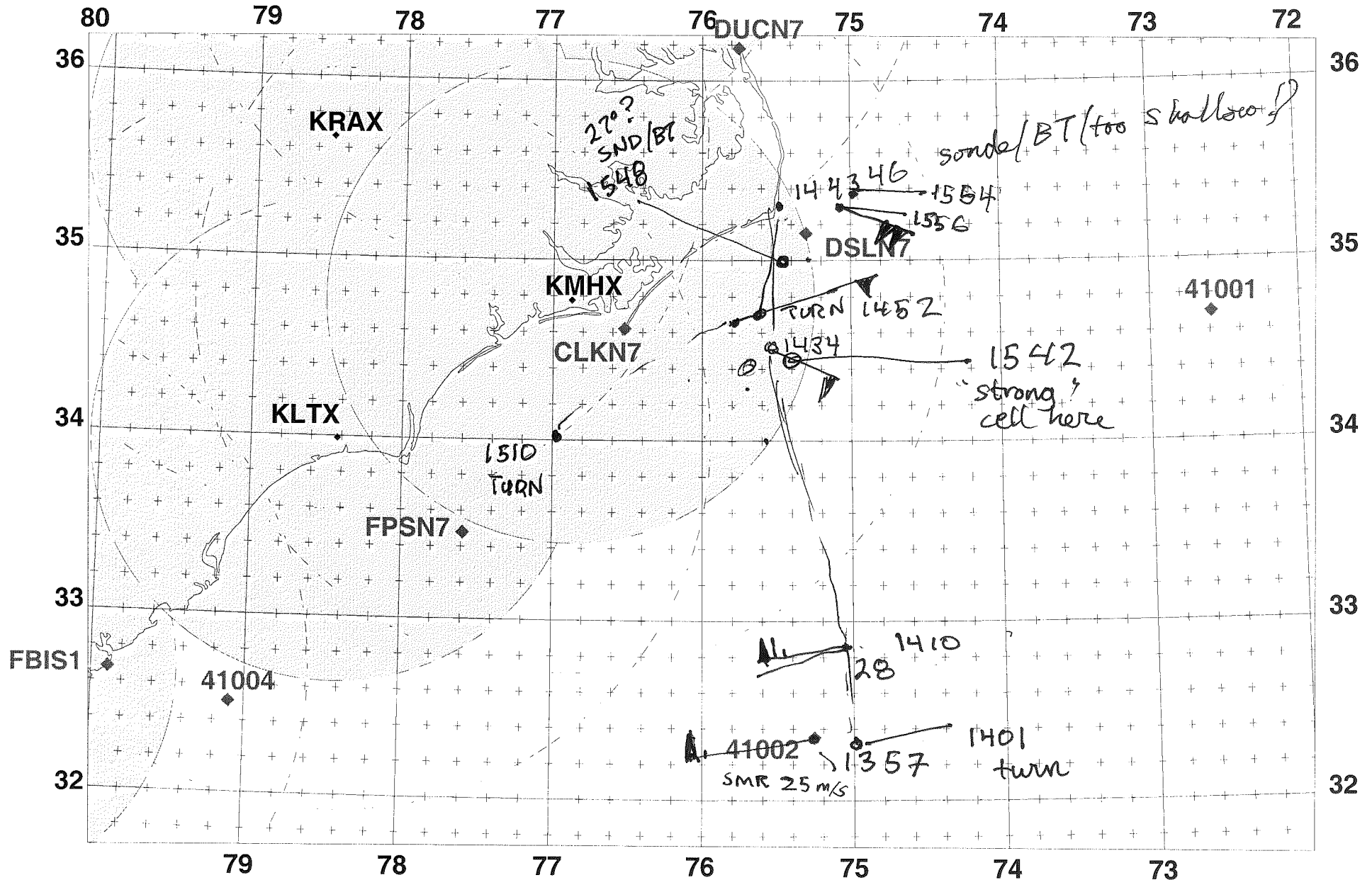


ltx_mhx_map.ps

030918H

1

Penetrations 11



0 50 100 km

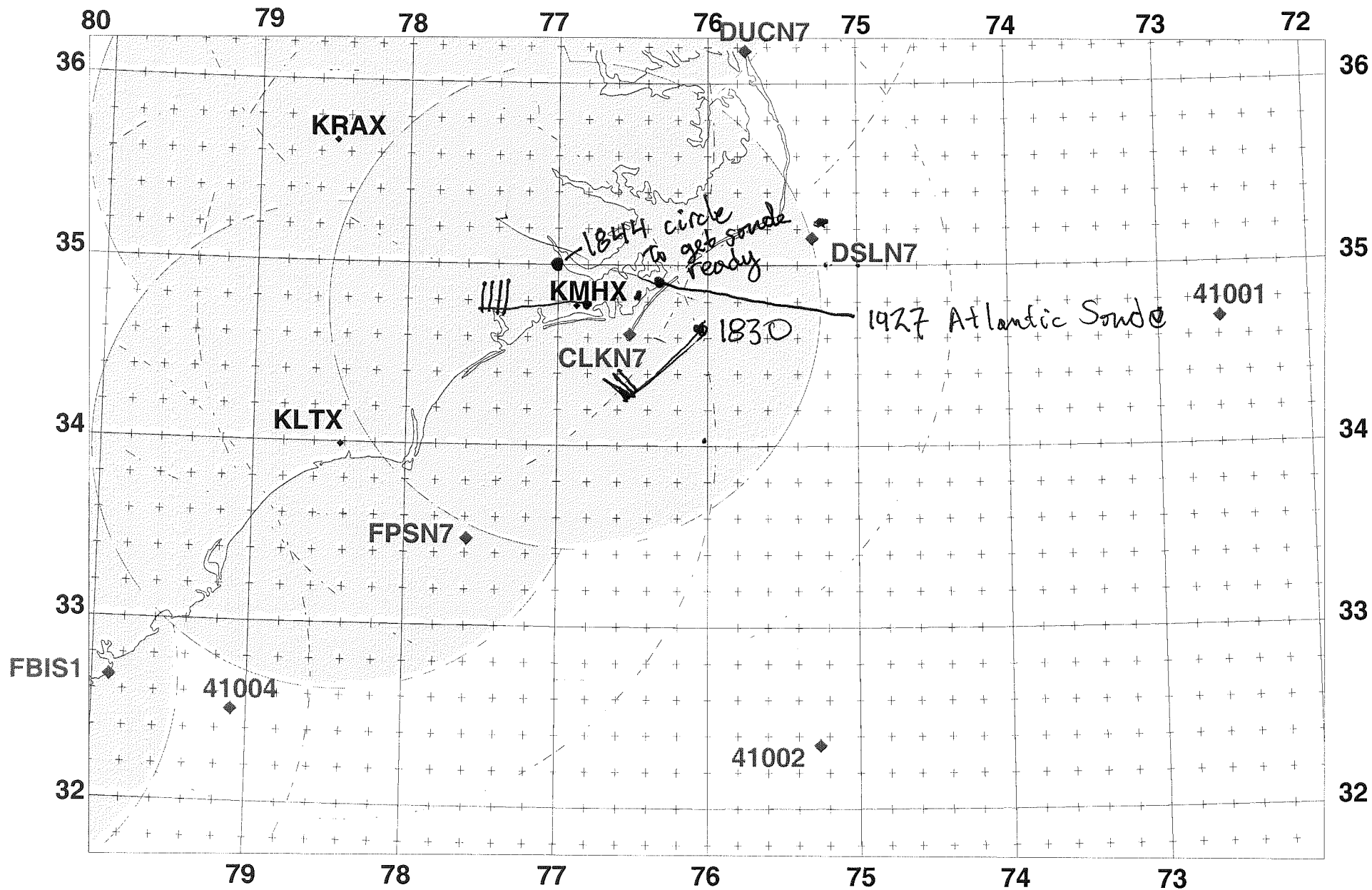
Center Lat: 34.00 Lon: -76.00

○ 230 km range rings

○ 150 km Doppler range

03918H (3) 1749 ON

ltx_mhx_map.ps



0 50 100 km

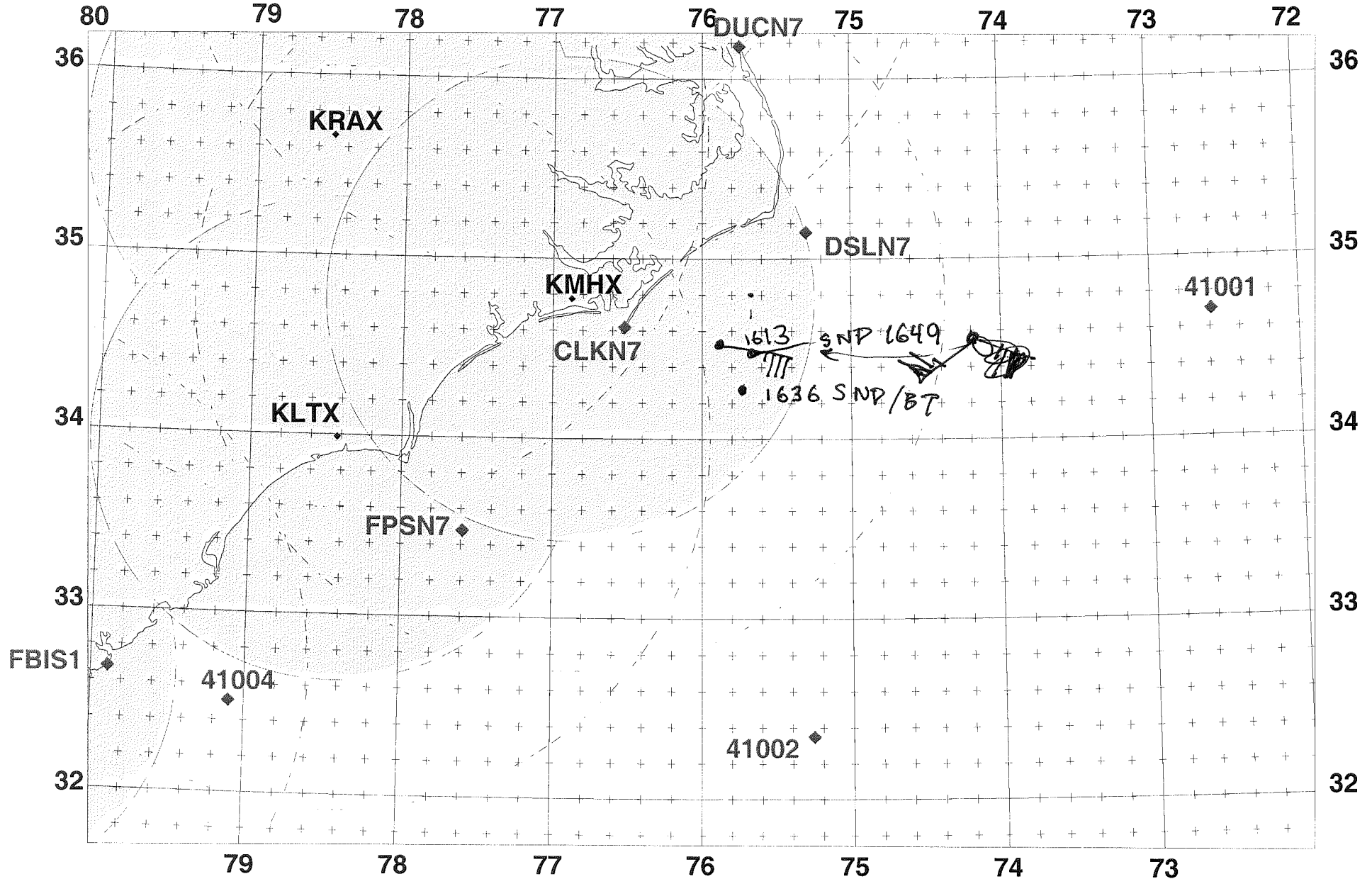
Center Lat: 34.00 Lon: -76.00

○ 230 km range rings

○ 150 km Doppler range

ltx_mhx_map.ps

030918H (2)



0 50 100 km

Center Lat: 34.00 Lon: -76.00

○ 230 km range rings ○ 150 km Doppler range