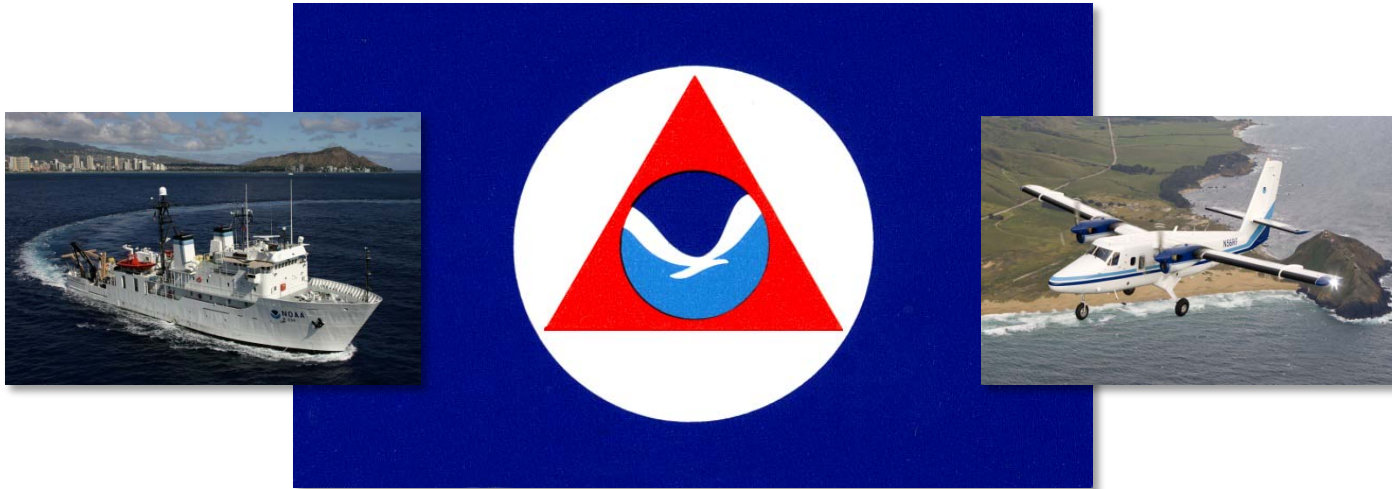


# 66<sup>th</sup> INTERAGENCY HURRICANE COFERENCE

## 5 MARCH 2012



*Jim McFadden, Nancy Ash, Jack Parrish,  
Paul Flaherty, Barry Damiano, Ian Sears,  
Jessica Williams, Richard Henning and Devin Brakob*



Office of Marine and Aviation Operations

# Agenda

- **2011 Season Hurricane Summary – by the numbers**
- **What did we accomplish during the season?**
- **2011 Instrumentation Update and Plans for 2012**
- **2011 Program Update for Hurricane Aircraft**
- **Lockheed-Martin P-3 Service Life Assessment Program Results**
- **Summary of FY-12 Plans for Heavy Aircraft**



# 2011 Hurricane Summary

• P-3	198.3 hours	31 flights
• G-IV	144.2 hours	18 flights
<b>Total</b>	<b>342.5 hrs.</b>	<b>49 flights</b>



# 2010 Hurricane Summary

• P-3	276.7 hours	47 flights
• G-IV	176.5 hours	24 flights
<u>Total</u>	<u>453.2 hrs.</u>	<u>71 flights</u>



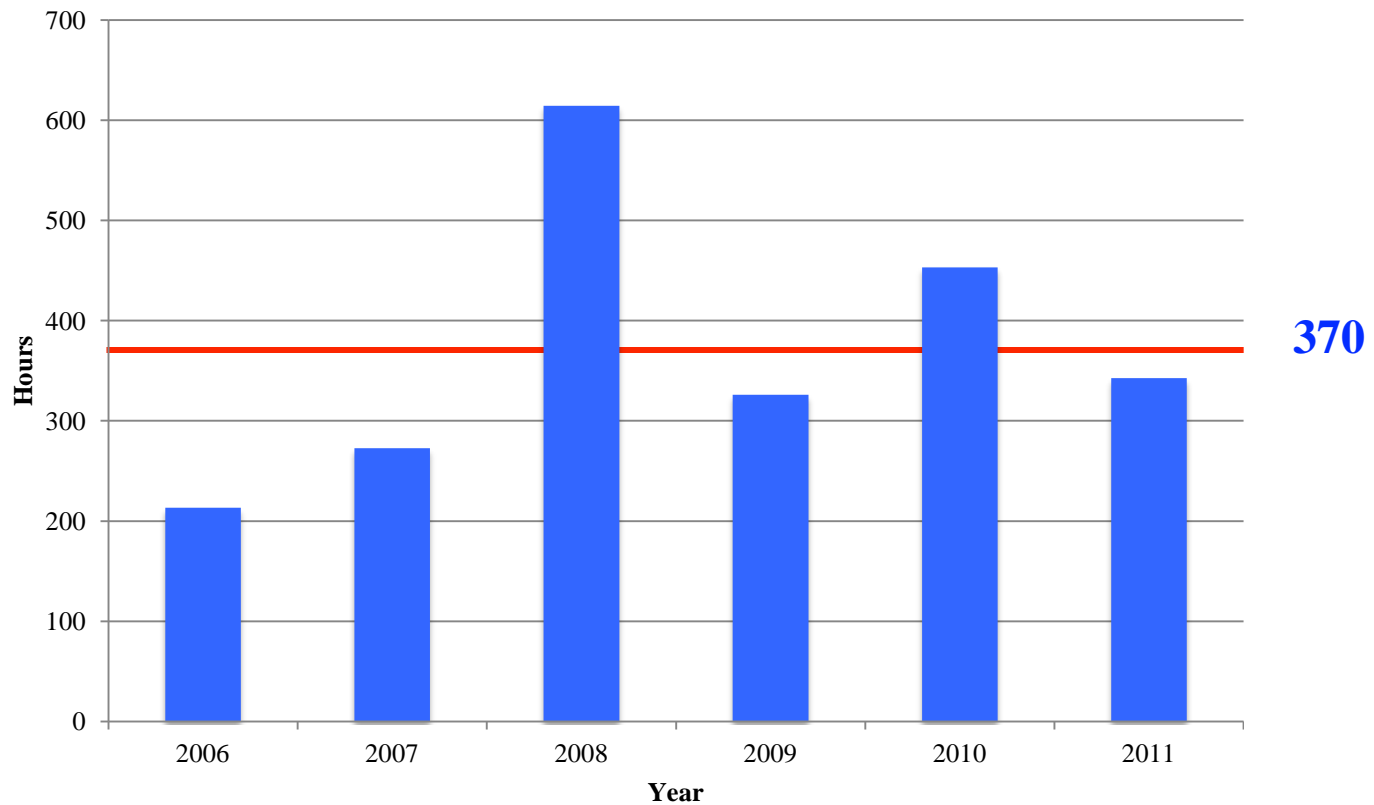
# 2009 Hurricane Summary

• P-3	171.2 hours	36 flights
• G-IV	154.7 hours	26 flights
<b><u>Total</u></b>	<b><u>325.9 hrs.</u></b>	<b><u>62 flights</u></b>



# Hurricane Hours Flown

FY 2006-2011



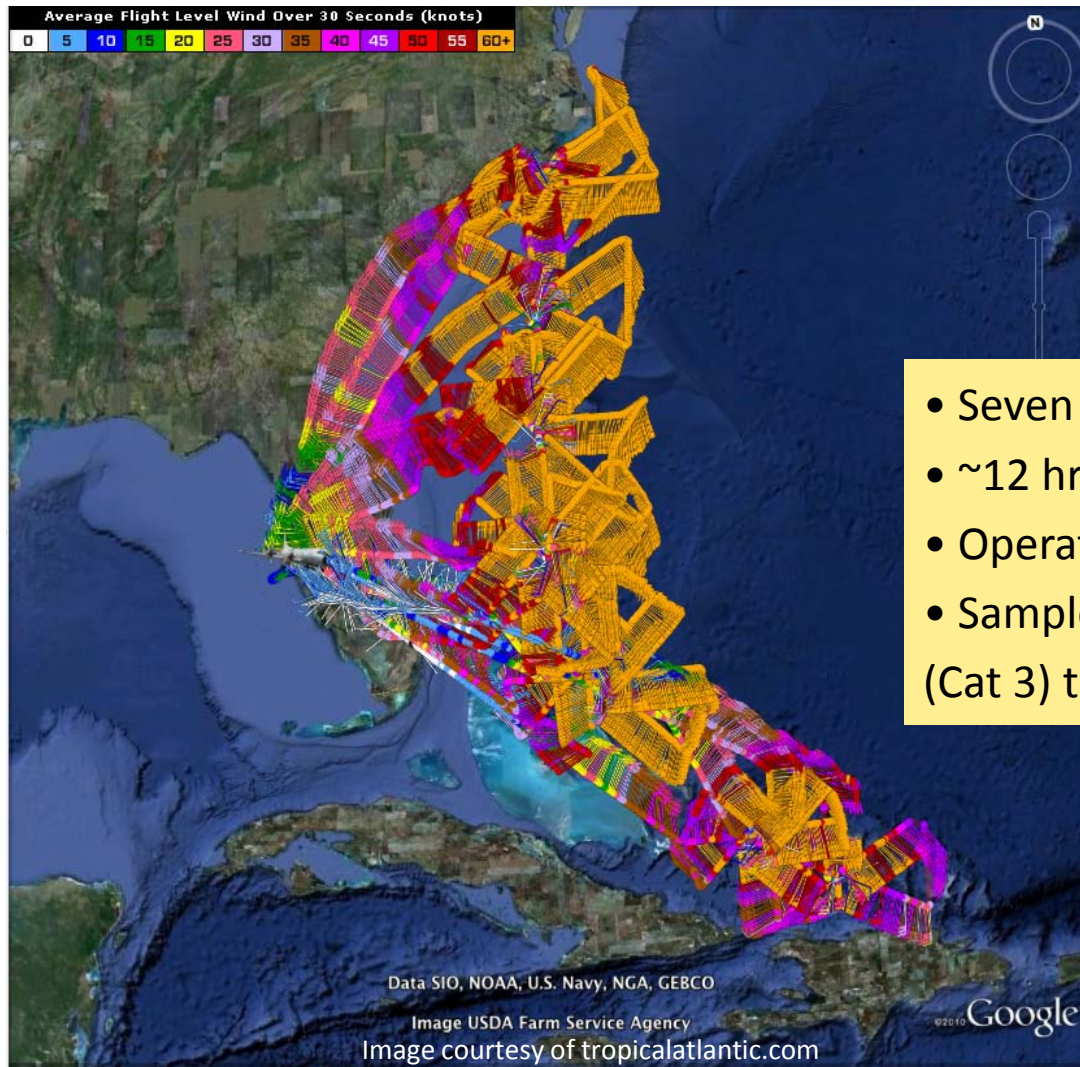
# 2011 Hurricane Summary

## What did we do in 2011?

- East Coast Hurricane Awareness Tour
  - Factory acceptance tests on G-IV TDR complete
- Eastern Pacific Decay Experiment accomplished for H. Dora
  - 15 Missions (8 G-IV; 7P-3) flown for Hurricane Irene
    - Gulf AXBT Survey Mission
- Ocean Winds missions in E. Pacific for Hurricane Hilary
  - Dropsonde Intercomparison – Global Hawk and G-IV



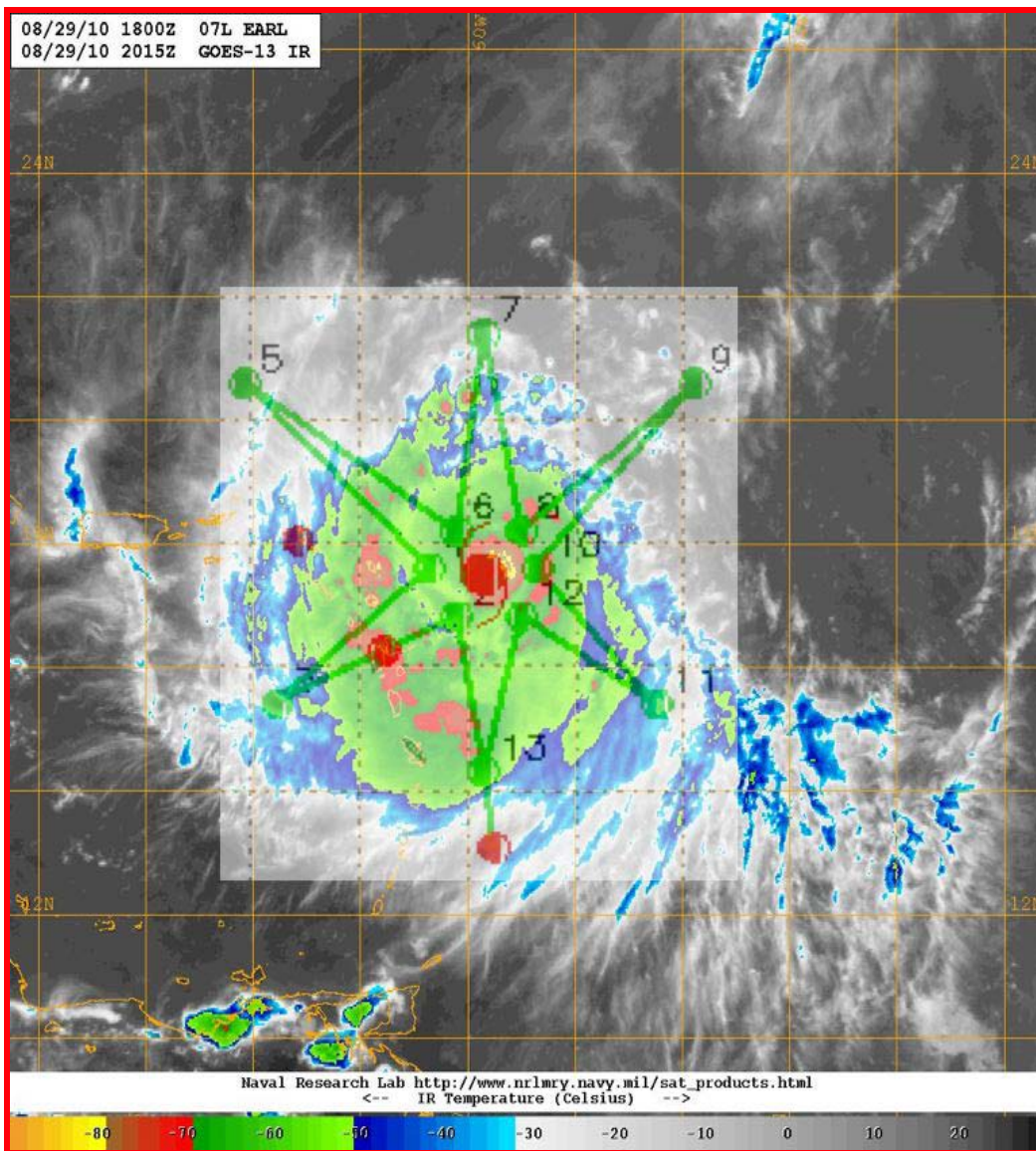
# Hurricane Irene P3 coverage (Aug. 23-27, 2011)



- Seven TDR flights (1 aborted)
- ~12 hr sampling cycle
- Operated out of MacDill AFB
- Sampled Irene as a major hurricane (Cat 3) through landfall (Cat 1)







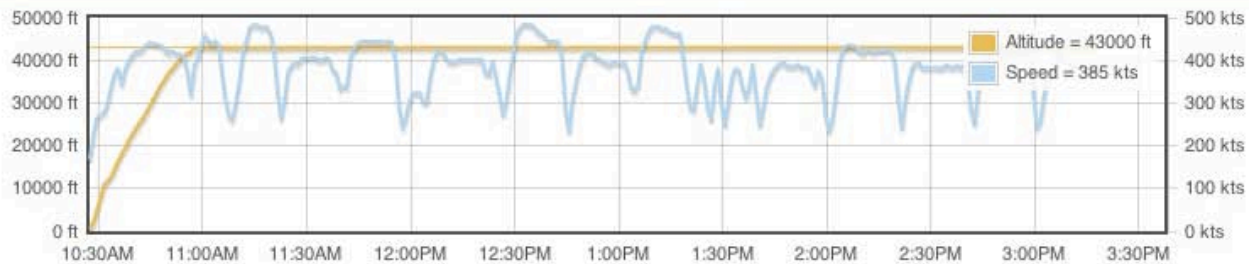
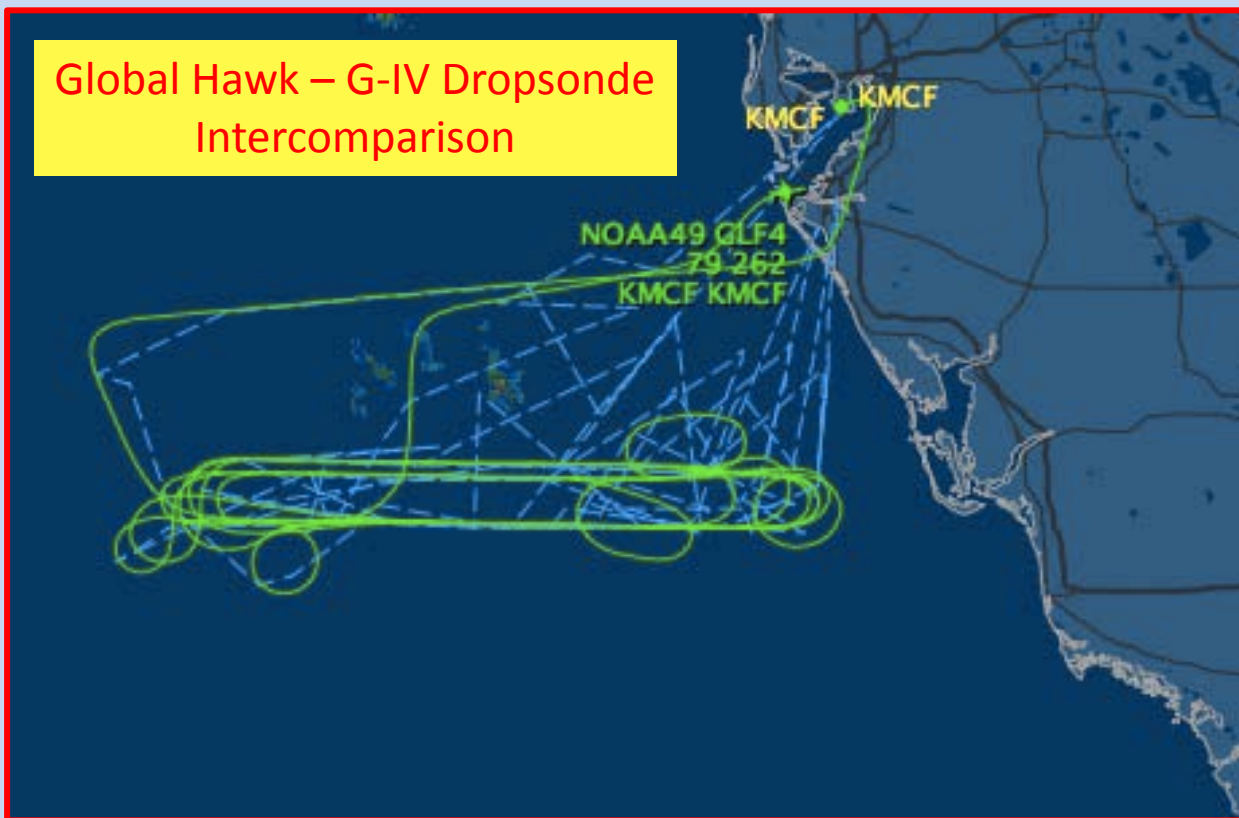
# G-IV SALEX Mission

## Hurricane Katia

### 2011

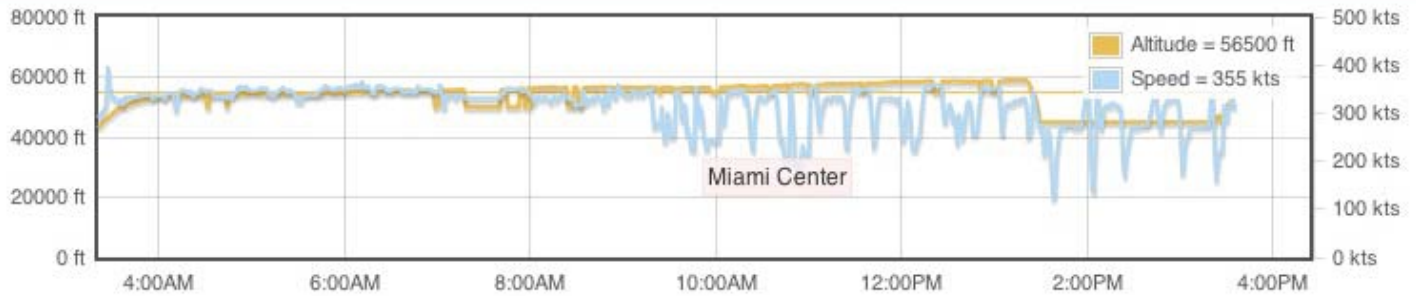


# Global Hawk – G-IV Dropsonde Intercomparison



# Global Hawk – G-IV Dropsonde Intercomparison

NASA872 ZZZZ  
533 310  
KEDW W168





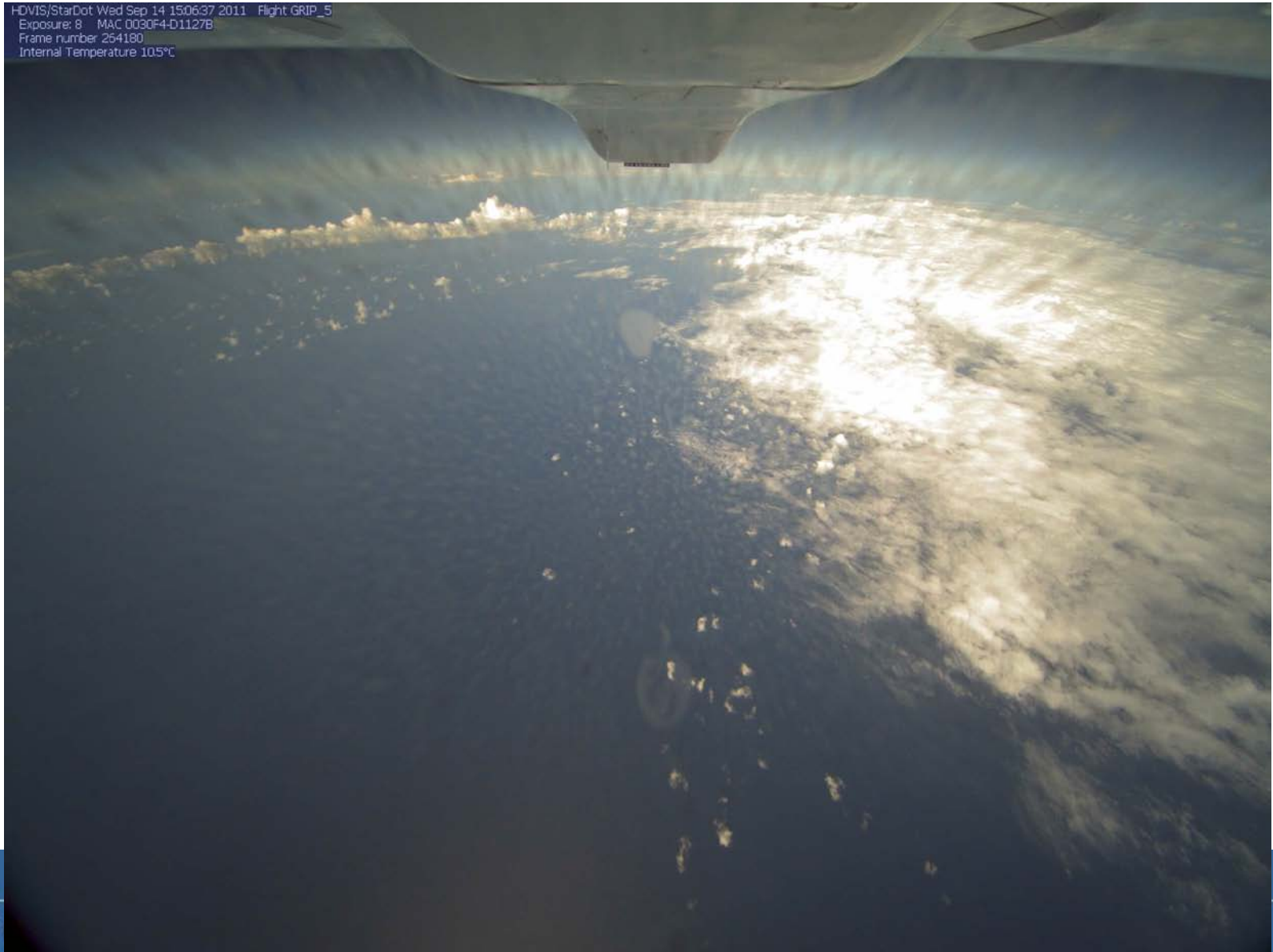
Global Hawk pics from NOAA G-IV  
during dropsonde intercomparison  
9/14/11



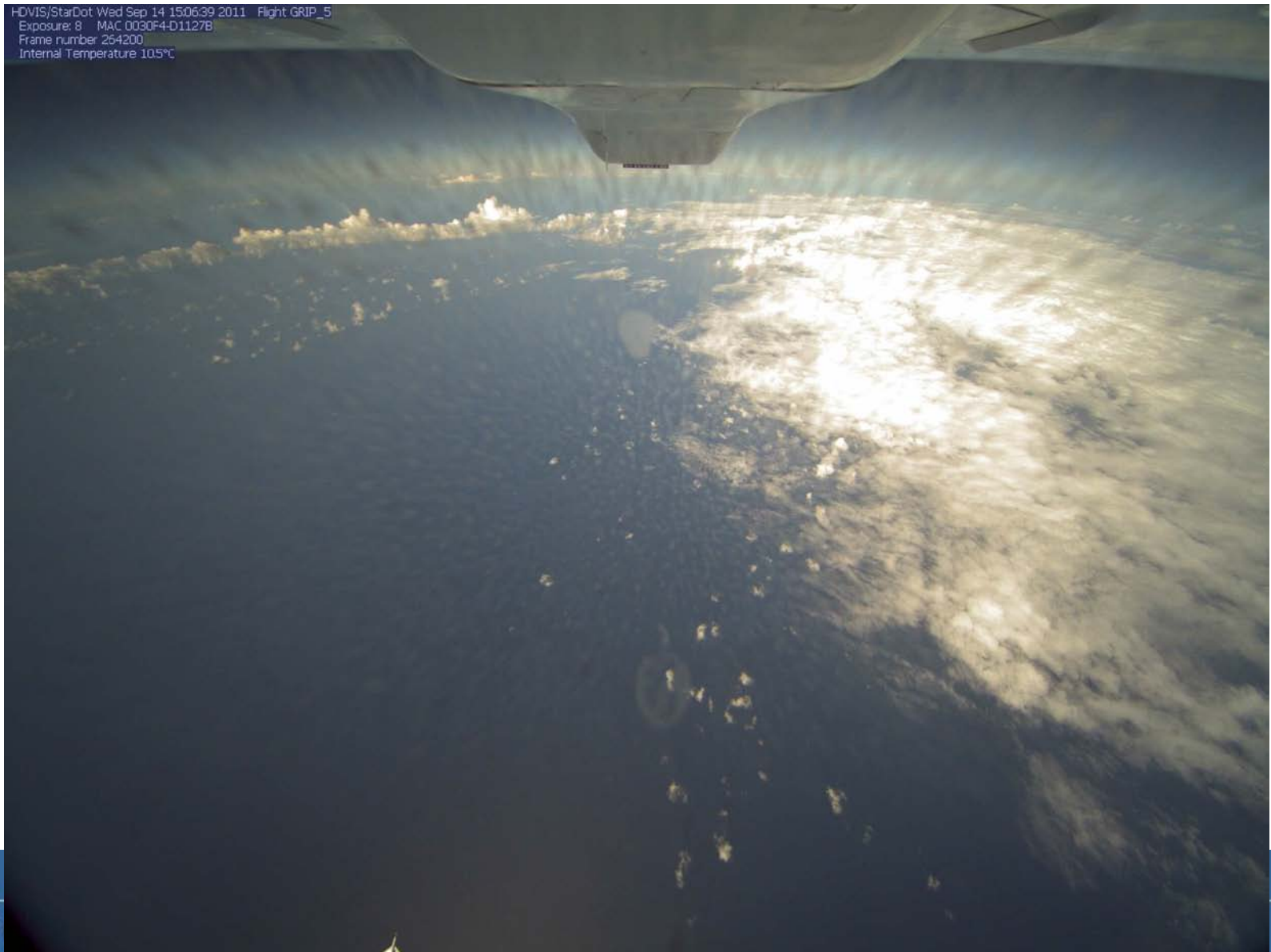
Courtesy LCDR Kristie Twining, NOAA



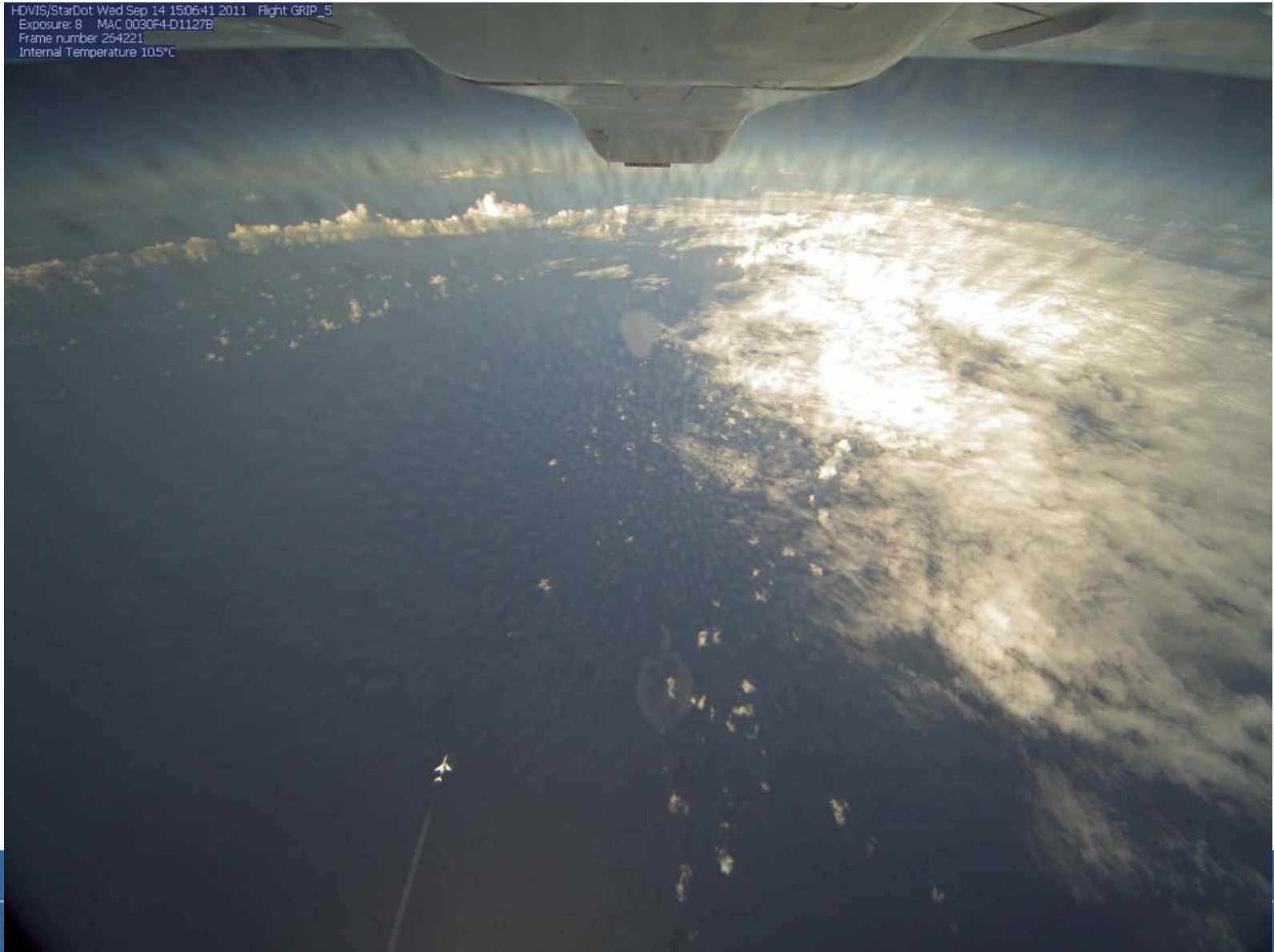
# HDVis Image of NOAA G-IV Underpass



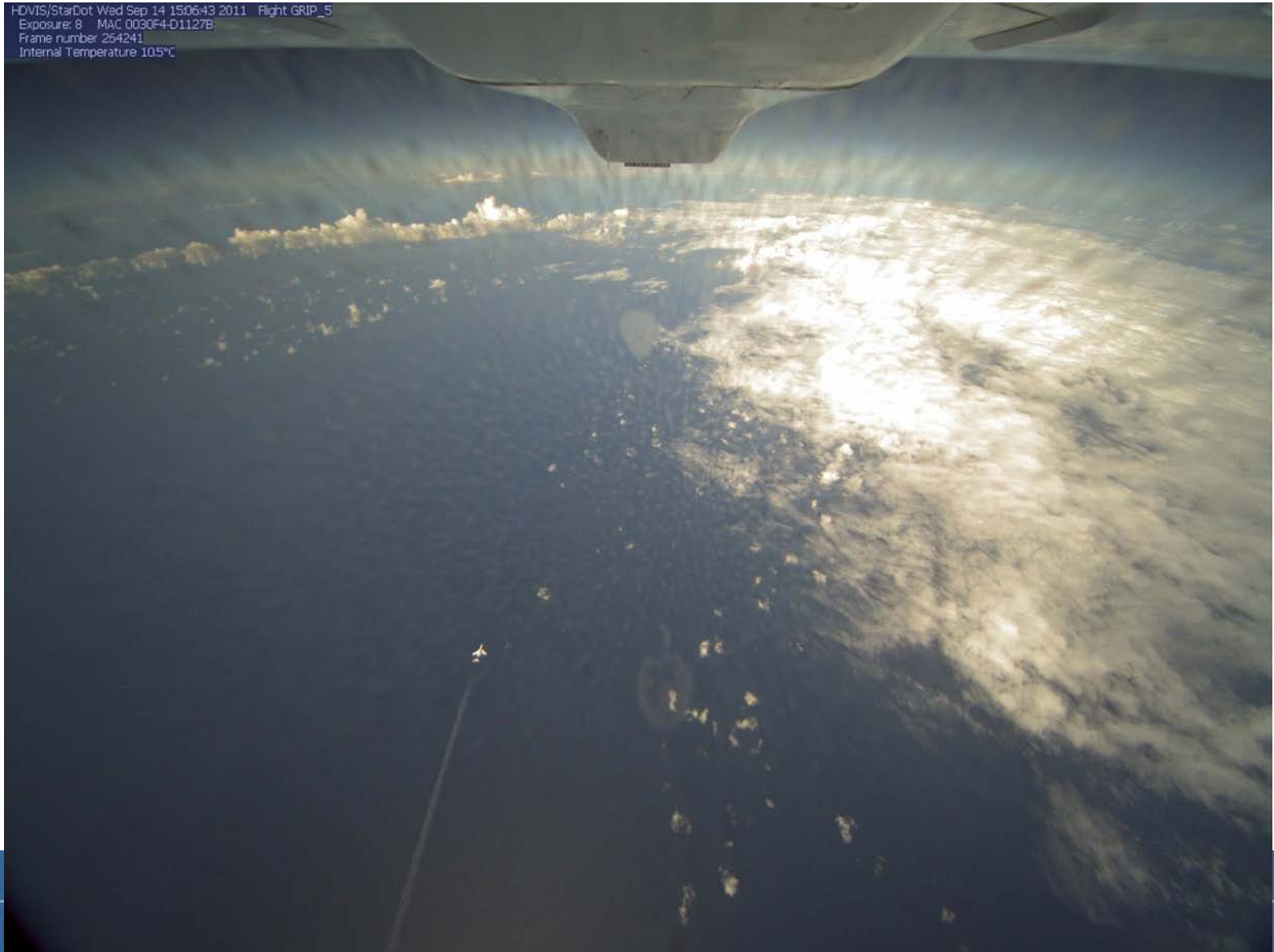
# HDVis Image of NOAA G-IV Underpass



# HDVis Image of NOAA G-IV Underpass

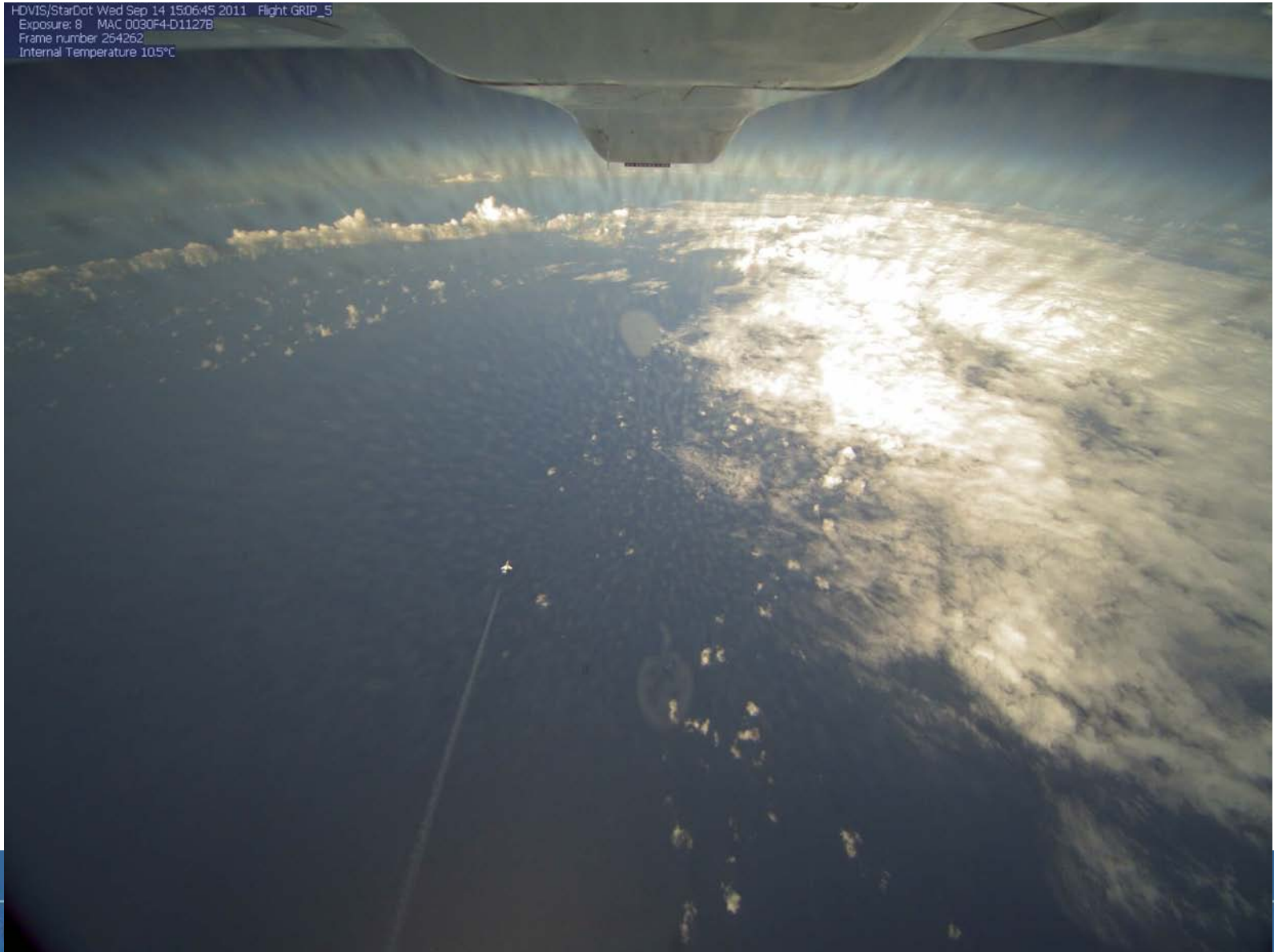


# HDVis Image of NOAA G-IV Underpass

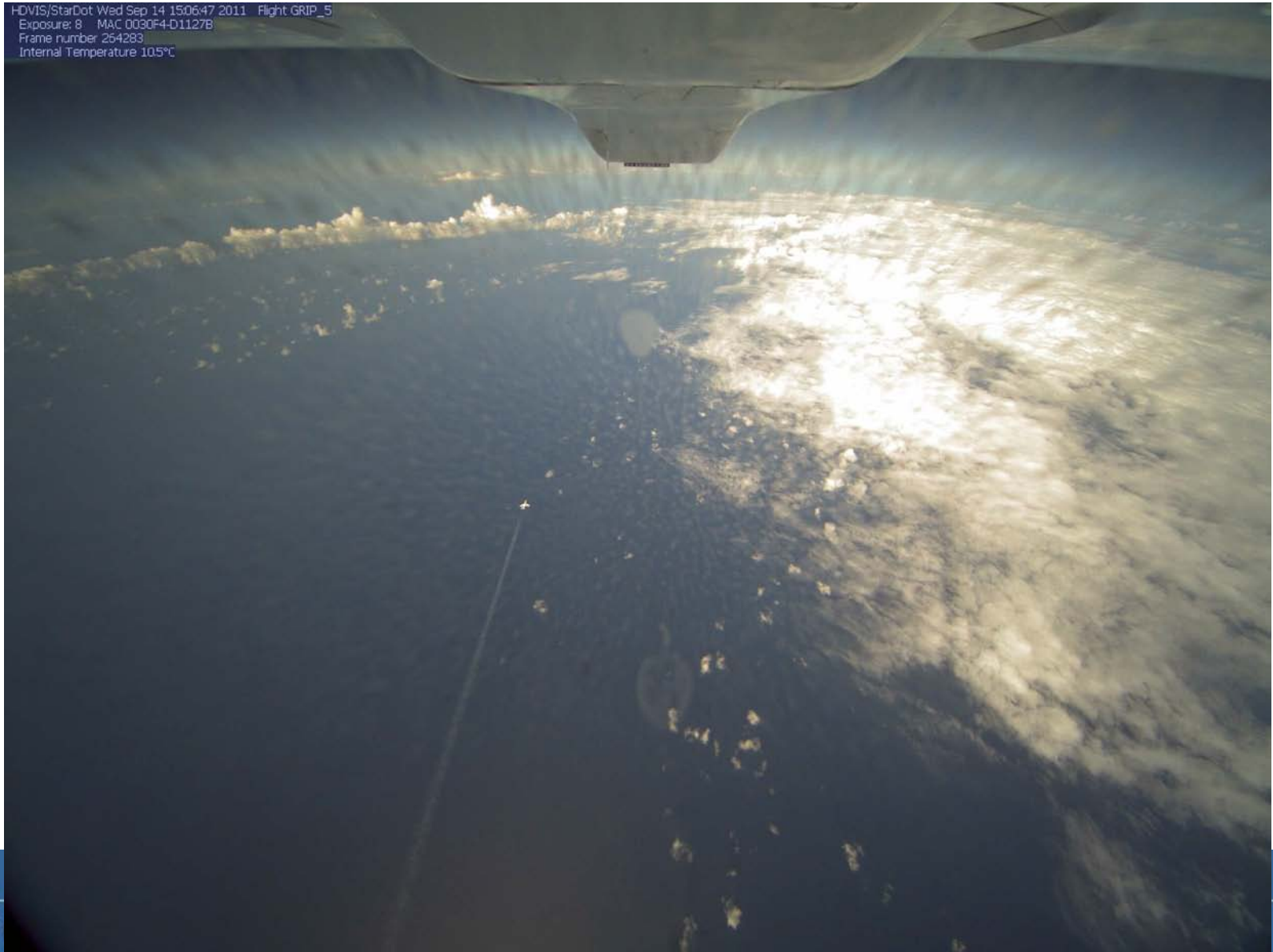




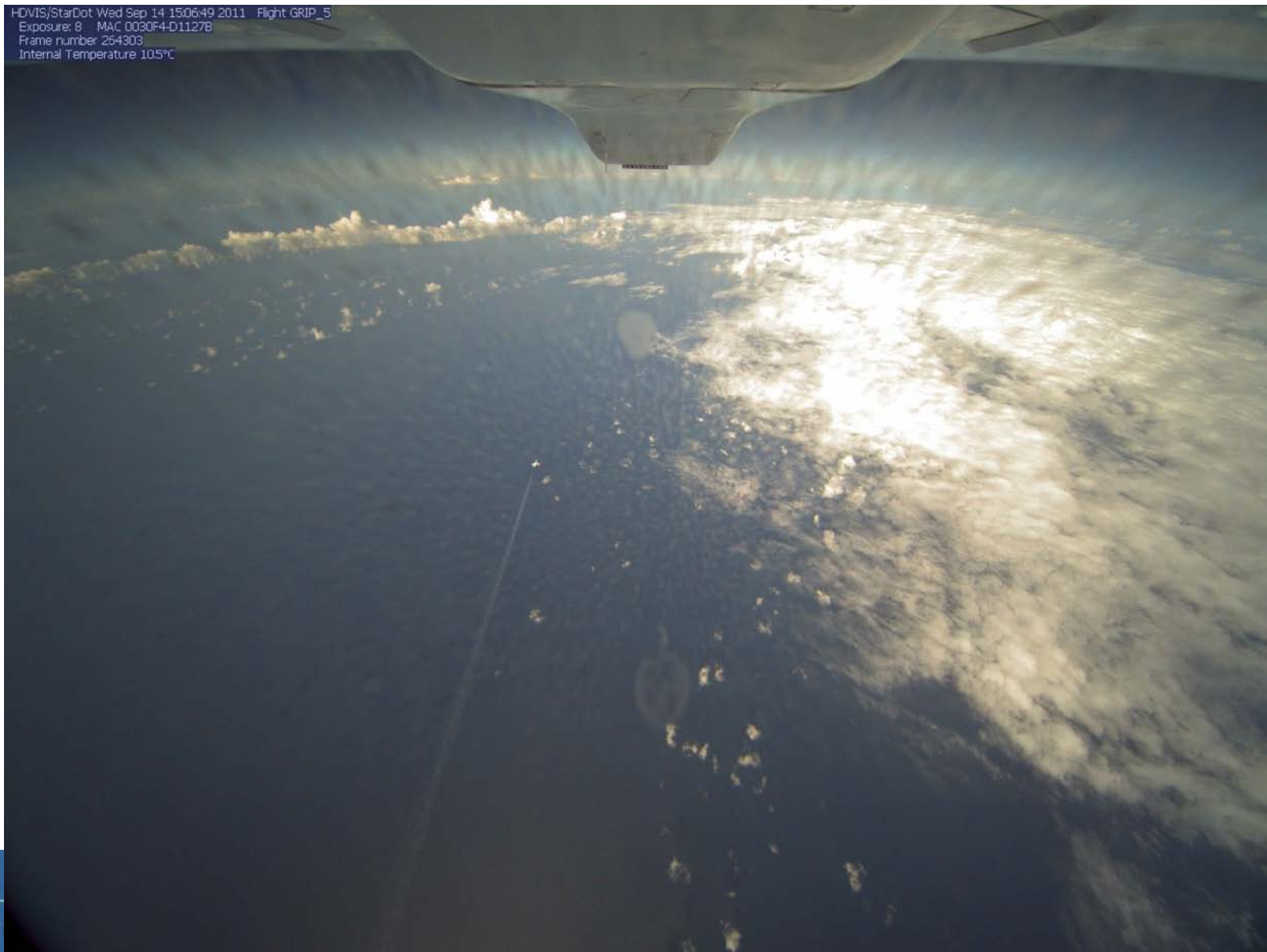
# HDVis Image of NOAA G-IV Underpass



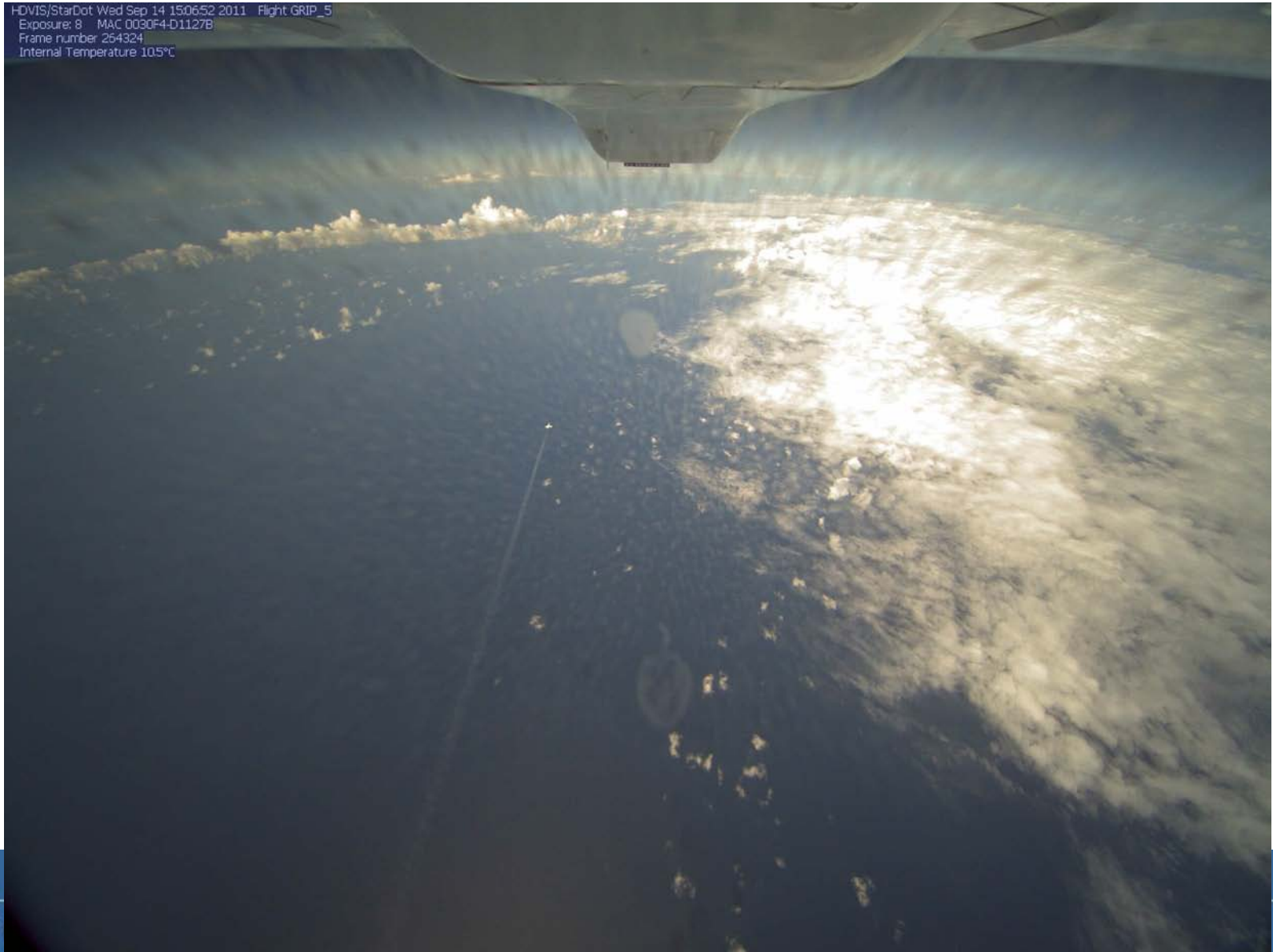
# HDVis Image of NOAA G-IV Underpass



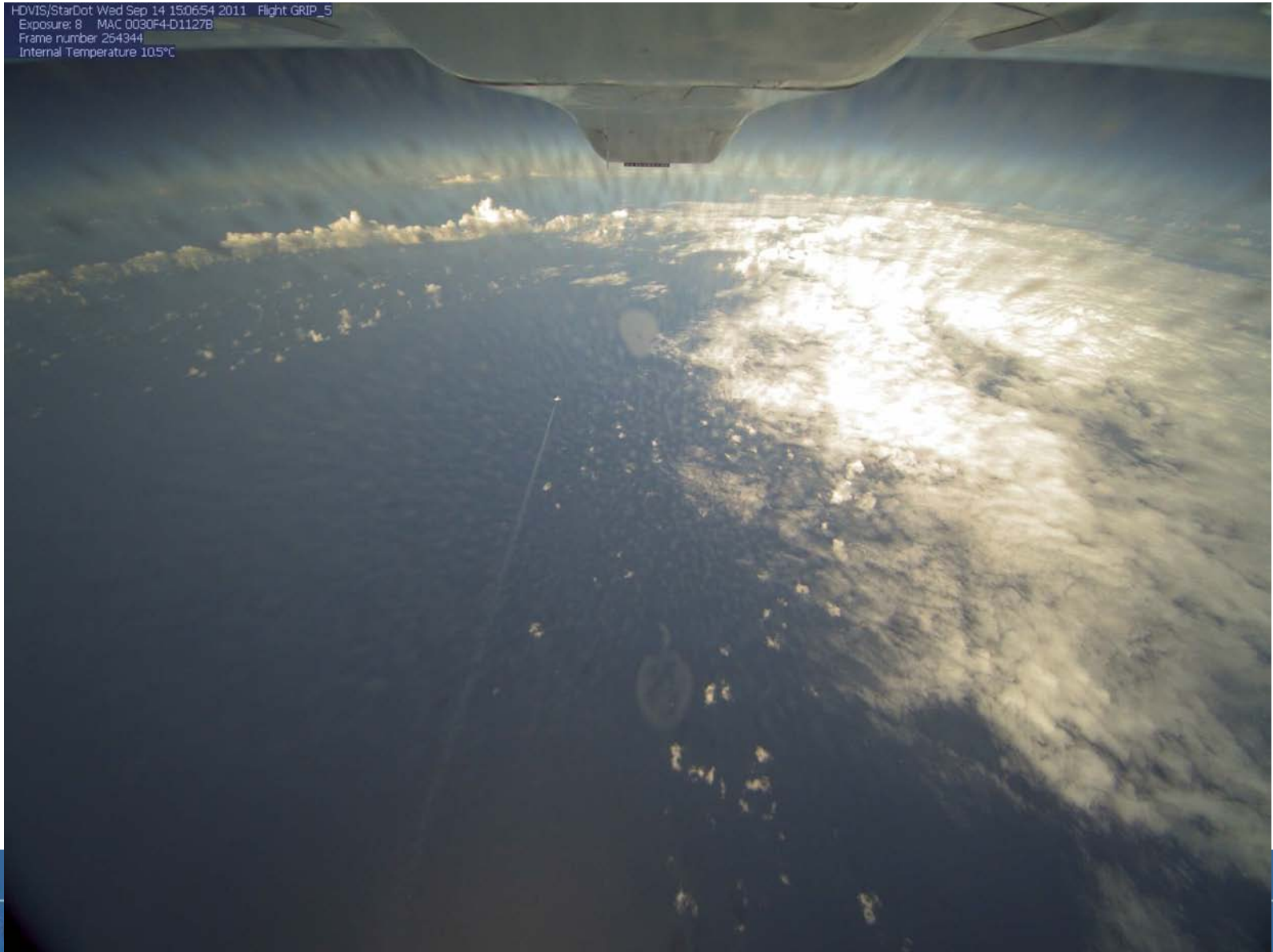
# HDVis Image of NOAA G-IV Underpass



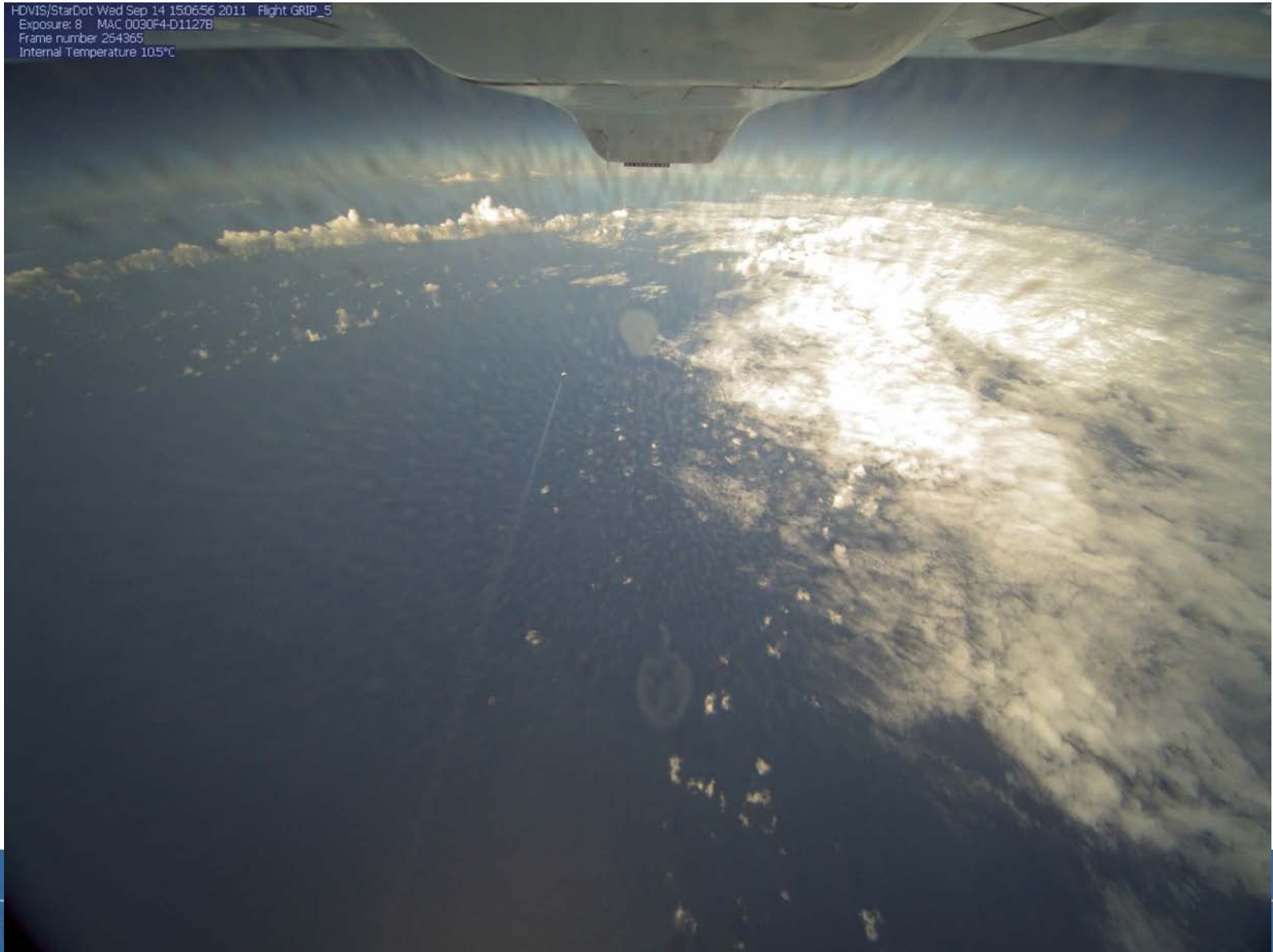
# HDVis Image of NOAA G-IV Underpass



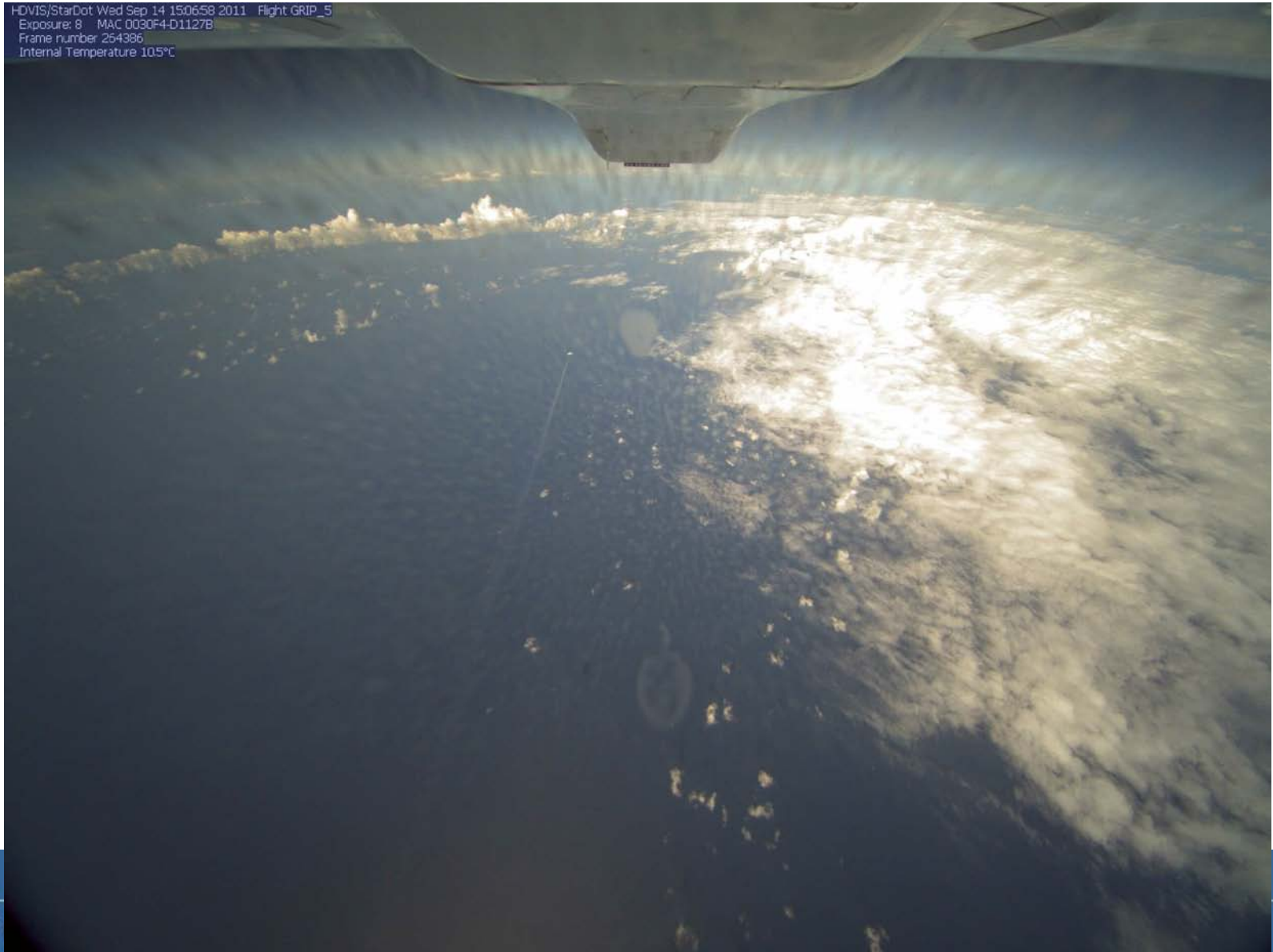
# HDVis Image of NOAA G-IV Underpass



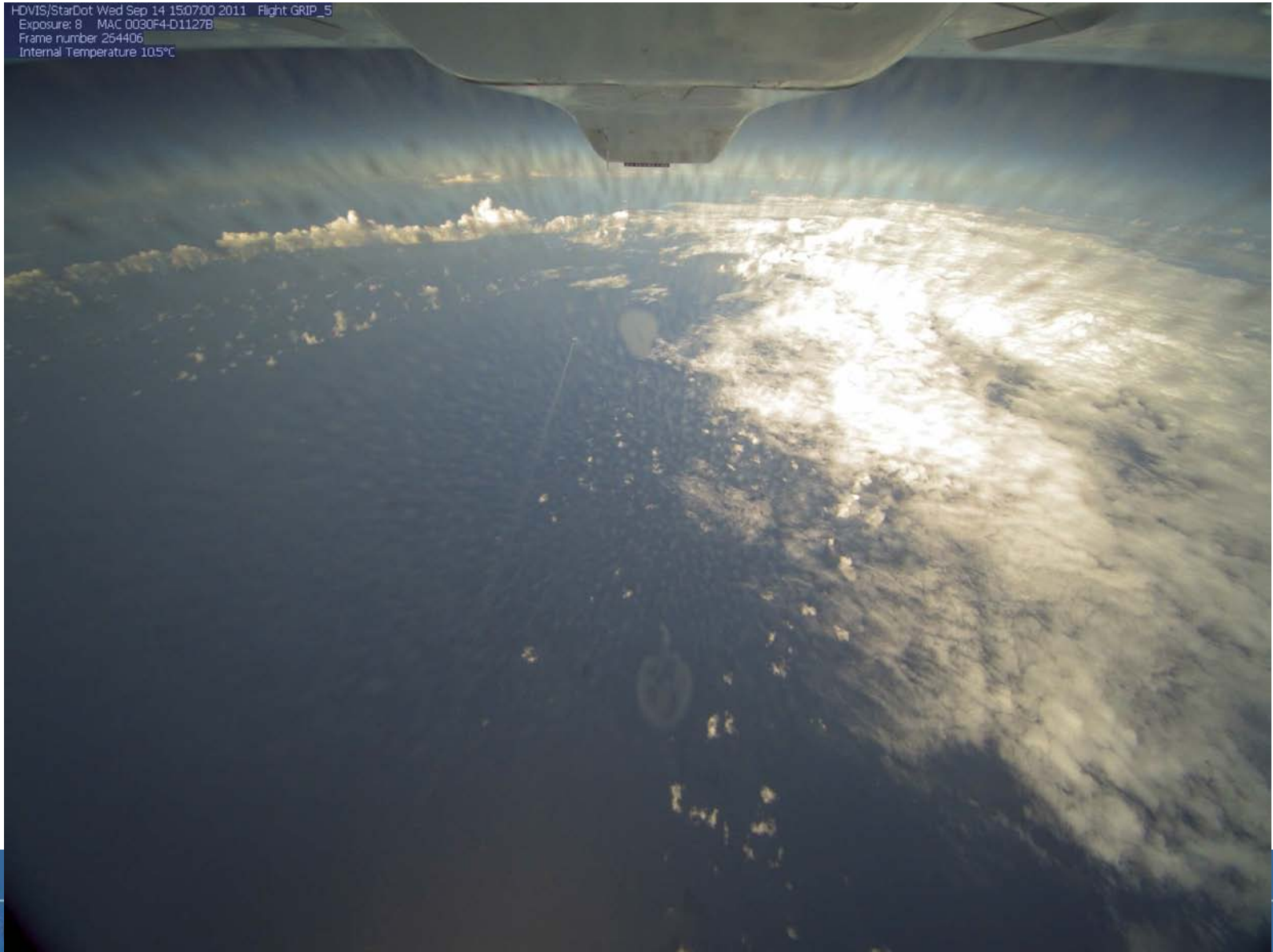
# HDVis Image of NOAA G-IV Underpass



# HDVis Image of NOAA G-IV Underpass

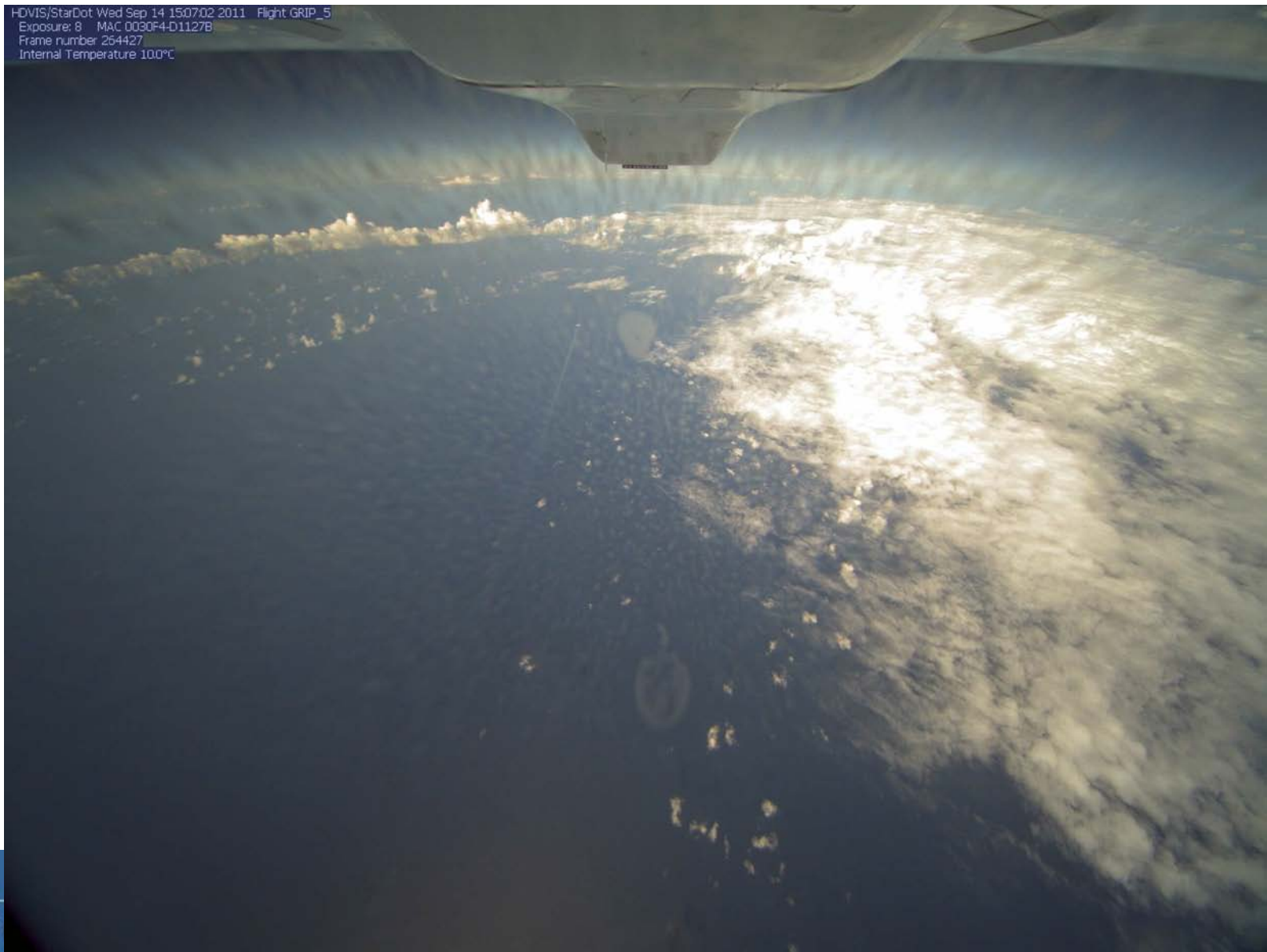


# HDVis Image of NOAA G-IV Underpass





# HDVis Image of NOAA G-IV Underpass

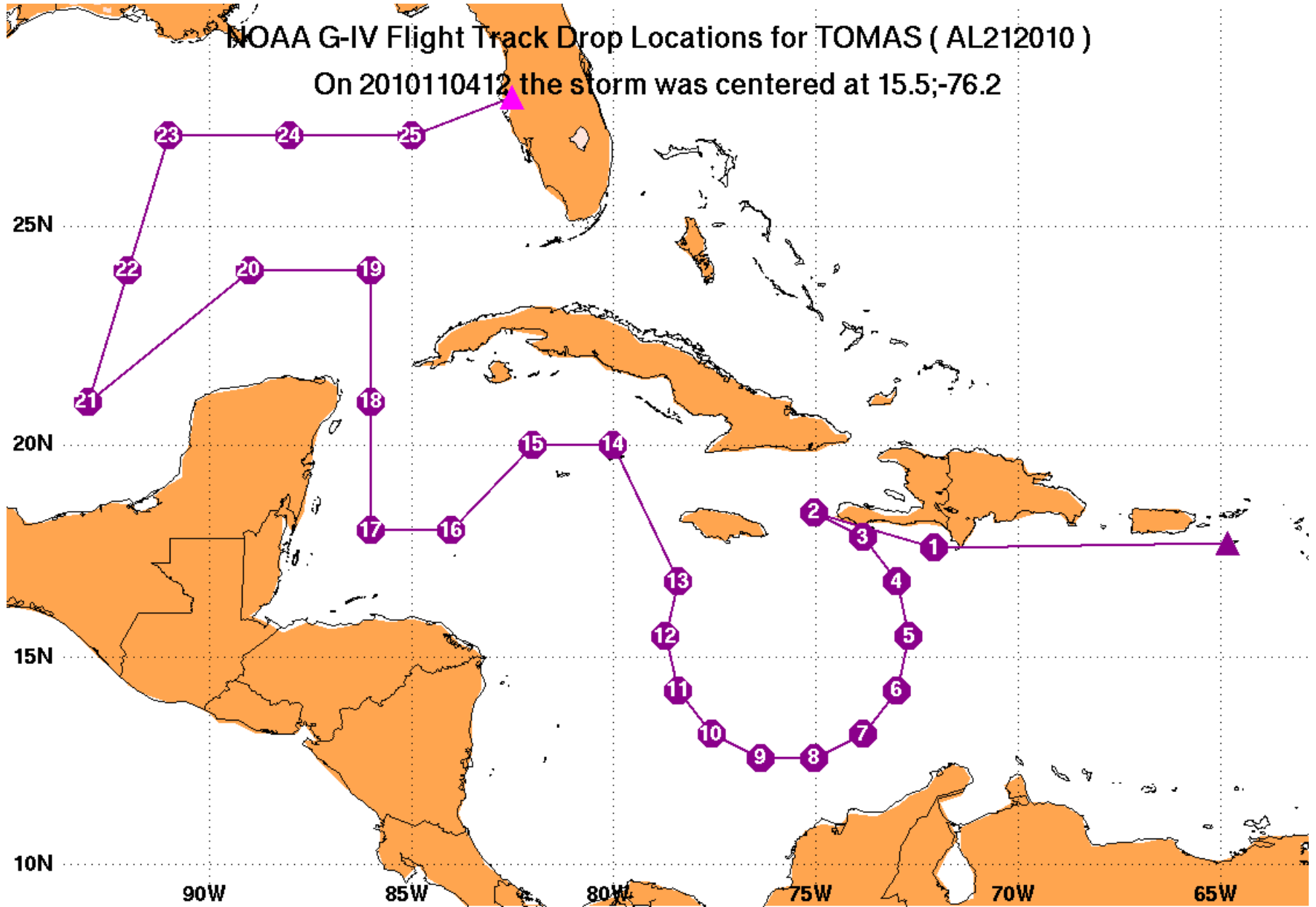


# HDVis Image of NOAA G-IV Underpass



# NOAA G-IV Flight Track Drop Locations for TOMAS ( AL212010 )

On 2010110412 the storm was centered at 15.5;-76.2

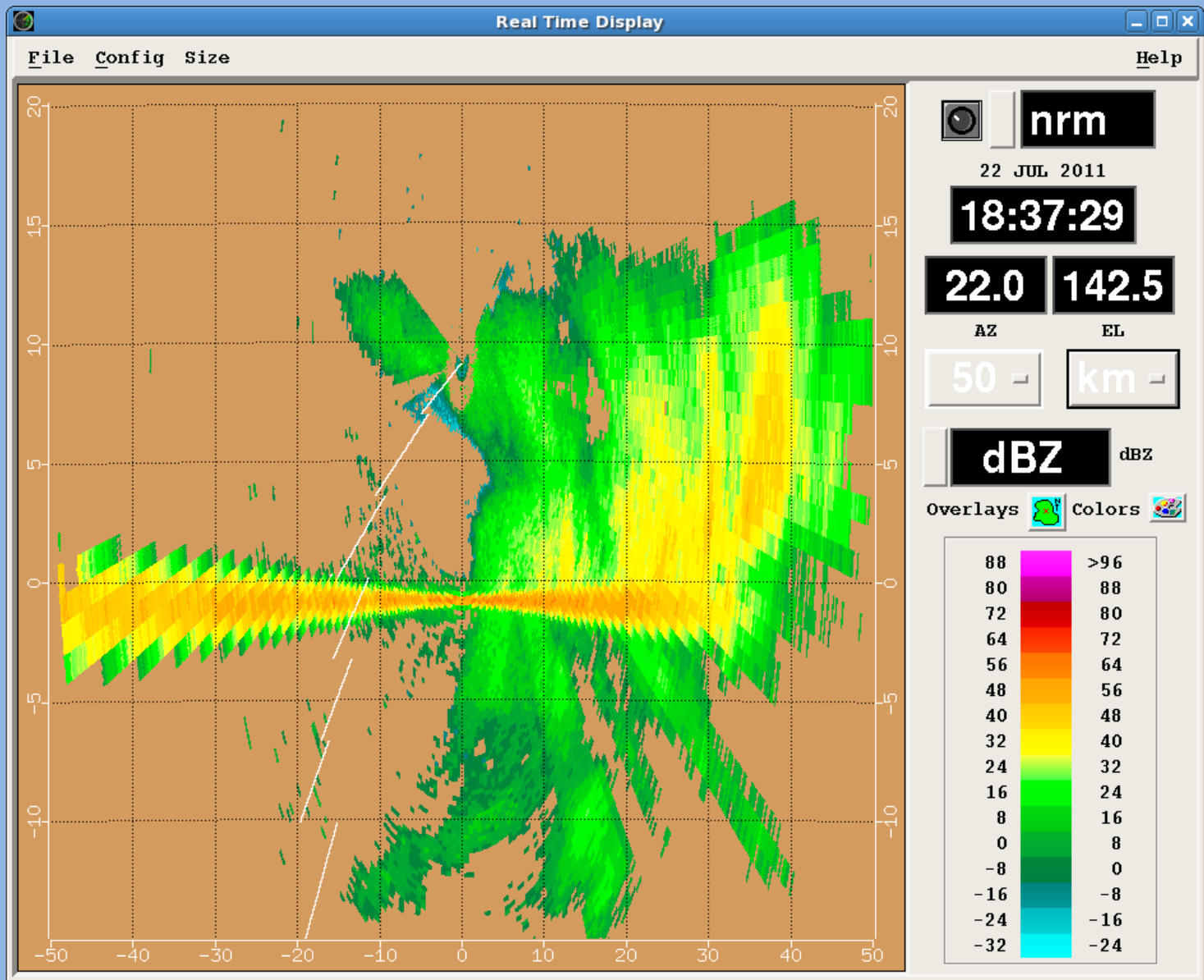


# FY12 Priorities and Plans

## 1. G-IV Tail Doppler Radar







# FY12 Priorities and Plans

1. G-IV Tail Doppler Radar
2. P-3 RVP-8 Radar Upgrade





N42RF



# FY12 Priorities and Plans

1. G-IV Tail Doppler Radar
2. P-3 RVP-8 Radar Upgrade
3. P-3 Data System Upgrade (AAMPS)



***FY11 and FY12***

***AOC***

***Programs***



# FY11 Base Funded Flight Hour Re-allocation

Line	Program	Original Allocation		Revised Allocation		
		Hours*	Total Cost	% Change	Hours	Total Cost
NWS	Hur Surv, TDR Ops (G-IV)	230	\$0.57 M	-20%	185	\$0.46 M
NWS/ OAR	Hur Rsch/Reco, TDR Ops (P-3)	280	\$1.04 M	-41%	165	\$0.61 M
NWS	Winter Storms (G-IV)	300	\$0.91 M	-	300	\$0.91 M
NWS	Snow Survey (Jet Prop)	550	\$0.34 M	-9%	500	\$0.31 M
NWS	Snow Survey (Shrike)	400	\$0.15 M	-25%	300	\$0.12 M
NESDIS	Ocean Winds Winter (P-3)	90	\$0.43 M	-11%	80	\$0.39 M
OAR/ OMAO	N-44 Test & Eval (P-3)	60	\$0.22 M	-100%	0	\$0.00 M
NOS	Coastal Mapping / Emergency Response (King Air)	400 / 0	\$0.34 M	-	350 / 50	\$0.34 M
	<b>TOTAL</b>	<b>2310</b>	<b>\$4.0 M</b>	<b>-16.5%</b>	<b>1930</b>	<b>\$3.2 M</b>

\* Flight Hour Allocation based on historical request and usage trends.



# FY11 Program & Reimbursable Flight Hour Re-allocation

Line	Program	Original Hours	% Change	Revised Hours
NMFS	Northeast Right Whale/AMAPPS (Otter)	996	-21%	786
NMFS	Southeast Right Whale (Otter)	300	-	300
NMFS	Harbor Seals (Otter & Shrike)	300	-25%	225
NMFS	Steller Sea Lion (Otter)	110	-	110
NMFS	Leatherback Turtles (Otter)	70	-	70
NMFS	Loggerhead Turtles (Otter)	60	+42%	85
NMFS	Gray Whales (Otter)	55	-100%	0
NMFS	BOWFEST (Otter)	70	-	70 (R)
NMFS	BWASP (Otter)	0	+100%	50 (R)
NMFS	DWH NRDA Gulf of Mexico (Otter)	0	+100%	150 (R)
NOS	DWH Aerial Imagery (King Air)	90	-	90 (R)
NOS	Airport Surveys (King Air)	20	-	20 (R)
NOS	Living Marine Resources (Otter)	265	-50%	130
NOS	GRAV-D (P-3)	0	+100%	200
OAR	Bering Sea (Otter)	60	-100%	0
OAR	CSD LIDAR (Otter)	50	-100%	0
NWS	Alaska Snow Survey (Jet Prop)	107	-100%	0
	<b>TOTAL</b>	<b>2553</b>	<b>- 10.5%</b>	<b>2286</b>

# FY12 Base Funded Flight Hours

Line	Program	Request	9/19/11 Allocation	12/19/11 Allocation
NWS	Hurr Surv, TDR Ops (G-IV)	400	195	140
NWS/OAR	Hurr Rsch/Reco, TDR Ops (P-3)	700	150	0
NWS	Winter Storms (G-IV)	400	250	105
NWS	Water Resources (Turbo Cmdr)	675	500	425
NWS	Water Resources (Twin Otter/Shrike)	500	300	210
OAR	Hurr Rsch (P-3)	-	-	50
NESDIS	Ocean Winds Winter (P-3)	90	55	50
NESDIS	Ocean Winds Summer (P-3)	60	Piggy-back	Piggy-back
NOS	Coastal Mapping (King Air)	400	350	350
	<b>TOTAL</b>	<b>3,225</b>	<b>1,800</b>	<b>1330</b>
		<b>\$8.97M</b>	<b>\$3.83M</b>	<b>\$2.33M</b>

# FY12 Base Funded Allocation Recommendation

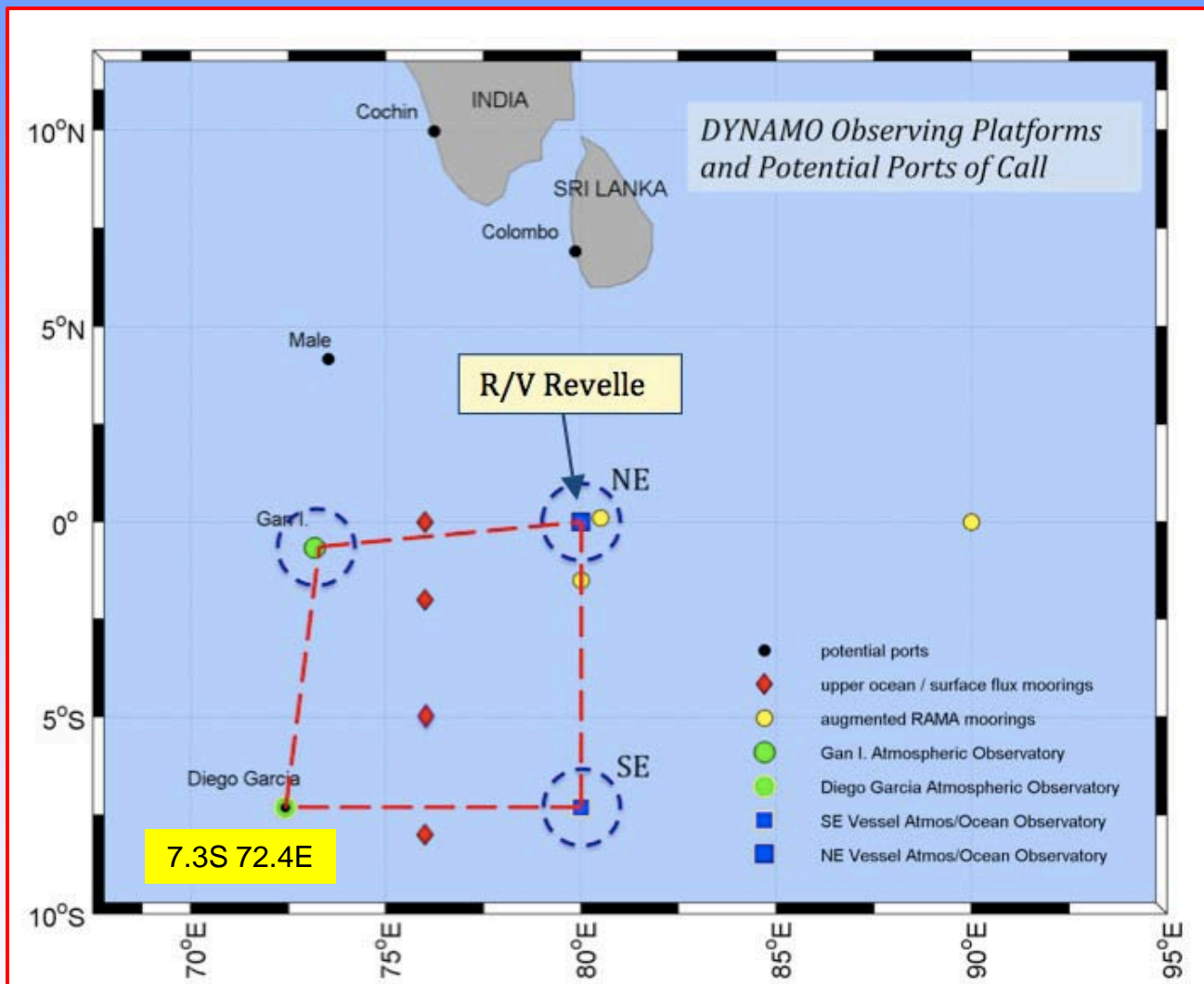
Line	Program	12/19/11 Allocation	change	2/27/12 Revision
NWS	Hurr Surv, TDR Ops (G-IV)	140	+50	190
NWS	Hurr Reco (P-3)	0	0	0
NWS	Winter Storms (G-IV)	105	+32	137
NWS	Water Resources (Turbo Cmdr)	425	+30	455
NWS	Water Resources (Twin Otter/Shrike)	210	+145	355
OAR	Hurr Rsch, TDR Ops (P-3)	50	+65	115
NESDIS	Ocean Winds Winter (P-3)	50	0	50
NESDIS	Ocean Winds Summer (P-3)	Piggy-back	0	Piggy-back
NOS	Coastal Mapping (King Air)	350	0	350
	<b>TOTAL</b>	<b>1,330</b>	<b>322</b>	<b>1,652</b>
		<b>\$2.33M</b>	<b>\$0.775M</b>	<b>\$3.11M</b>

# FY12 Proposed Program Funded Allocation

Line	Program	Hours
NMFS	AK Harbor Seals (Twin Otter)	195
NMFS	AK LOSI Ice Seals (Twin Otter)	250
NMFS	AK Steller Sea Lion (Twin Otter)	100
NMFS	Gray Whales (Twin Otter)	60
NMFS	Leatherback Turtles (Twin Otter)	70
NMFS	Loggerhead Turtles (Twin Otter)	95
NMFS	Northeast AMAPPS (Twin Otter)	110
NMFS	Northeast Right Whales (Twin Otter)	495
NMFS	Southeast Right Whales (Twin Otter)	340
NMFS	Southeast AMAPPS (Twin Otter)	120
NMFS	DWH NRDA – Fall and Winter (Twin Otter)	320 (R)
NMFS	WA/OR Harbor Porpoise (Twin Otter)	70
NOS	West Coast Living Marine Resources (Twin Otter)	90
<b>OAR</b>	<b>DYNAMO (P-3)</b>	<b>175</b>
N/A	Riverhead Foundation (Twin Otter)	258 (R)
	<b>TOTAL</b>	<b>2,748</b>



# DYNAMO





# DYNAMO – Diego Garcia



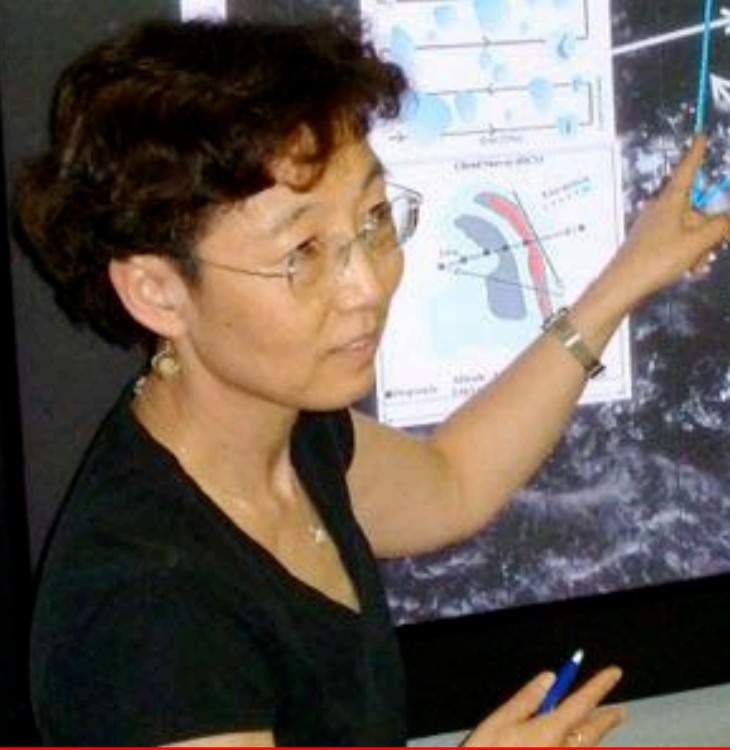
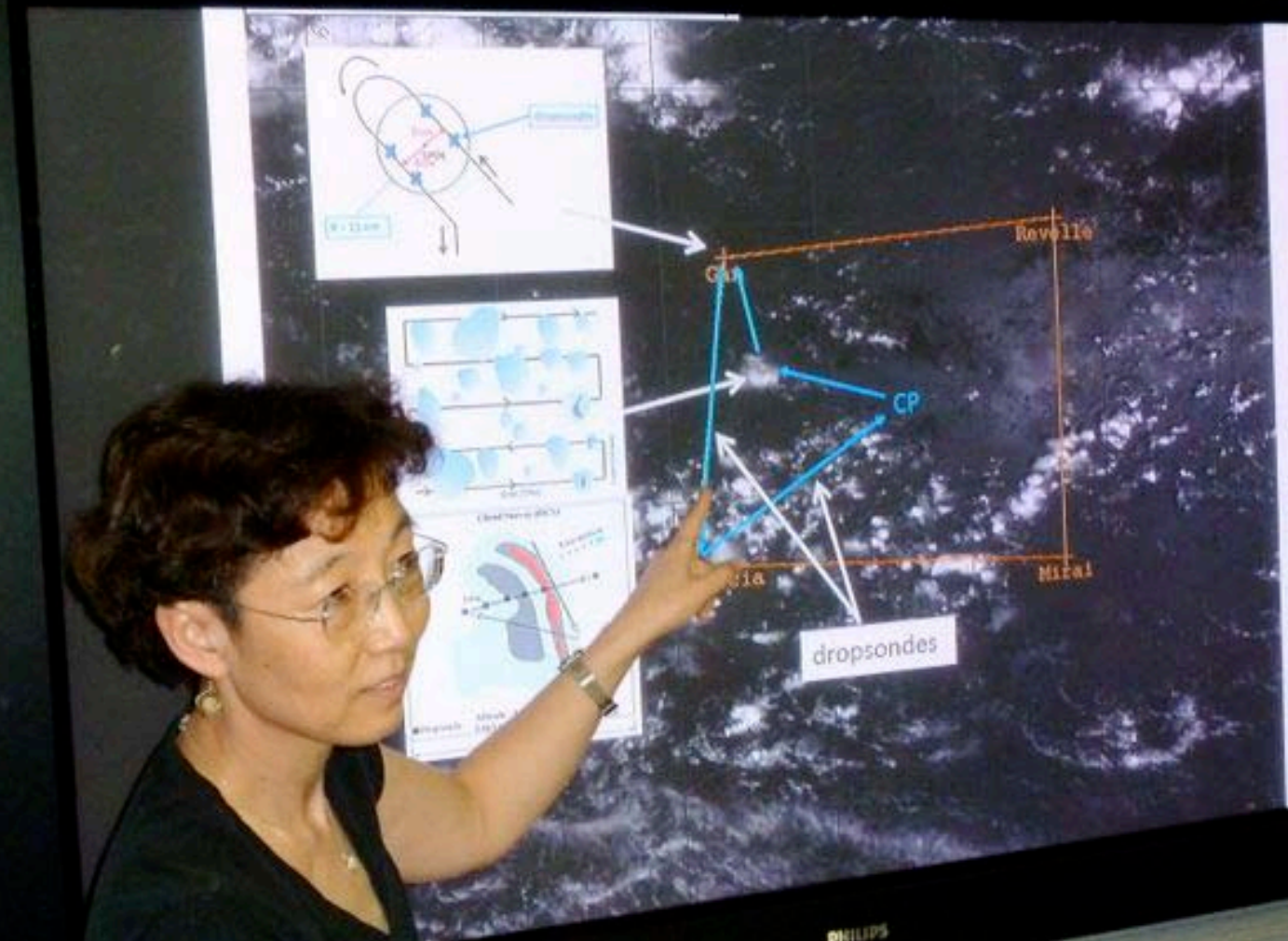


Office of Marine and Aviation Operations



DEPT. OF COMMERCE

N43RF



PHILIPS



MAN. BEL  
AUX PWR  
UNIT  
EXTINGUISHER

DUCT  
LAMP TEST

MASTER  
RESET

LANDING GEAR POSITION

UP UP UP

LEFT NOSE RIGHT

RADIO CALL  
N43 RF

ACCELERATION  
IN G'S

0 1 2 3 4 5 6 7 8 9 10 11 12



Office of Marine and Aviation Operations

# FY12 Priorities and Plans

**4. P-3 Service Life Assessment Program (SLAP)**

**5. Analysis of Alternatives –**



# LM Service Life Assessment Program (SLAP) Results

- **Service Life Impacts if NOAA implements LM Maintenance Recommendations:  
(PDMs and SSIs)**

N42 – 6,100 flight hours or 10 years (EOSL 2020)

N43 - 5,100 flight hours or 9 years (EOSL 2019)

N44 – Not Applicable. TLI exceeded / End of Service Life

- **LM Recommendations:**

At a minimum, conduct Special Structural Inspections (SSI) and PDMs per SLAP Report

To extend beyond EOSL shown above aircraft will require re-winging.





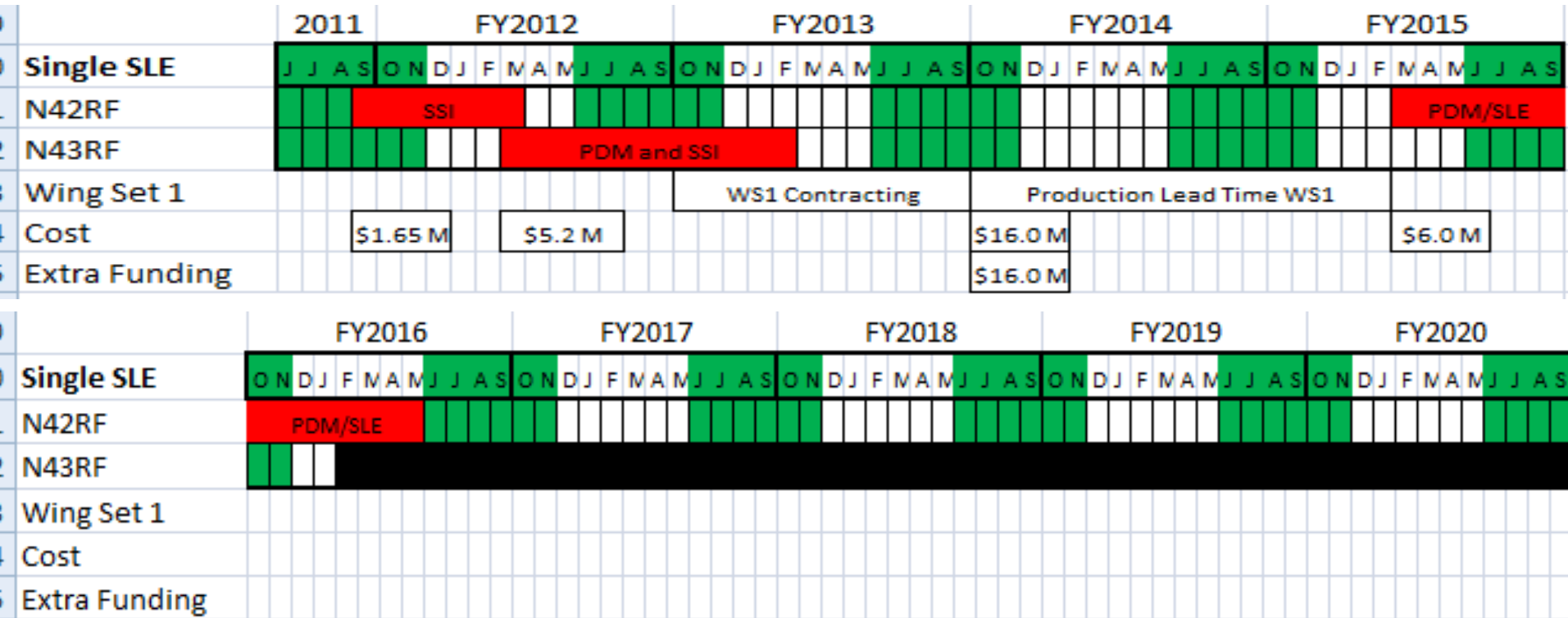
# Alternatives for Meeting NOAA's Research and Reconnaissance Requirements

- Option One – Special Structural Inspections, replacement of Center Wing-box and PDMs.
- Option Two – One-time PDM/SSI to both P-3s; SLE to One
- Option Three – Service Life Extension to both P-3s
- Concurrent Activity – Replacement Platform/Technology





# Option 2 One Aircraft SLE Option Timeline



Down for Inspections

Hurricane Season

End of Service Life

- N43 inducted into PDM/SSI FY2012 to allow hurricane season coverage during N42 SLE
- N42 / N43 End of Service Life 2031 / 2016
- Only 1 WP-3D available for 7 hurricane seasons (2012, 2015-2020)



## Summary FY-12 Heavy Aircraft Programs and Goals

- P-3 DYNAMO Project in Indian Ocean – **completed**
- G-IV WSR operations in Hawaii and Alaska – **near completion**
- P-3 Ocean Winds Winter project in Canada – **completed**
- G-IV OSAT and accept TDR from KA – **near completion**
- SSI and center wing-box installation on N42RF – **near completion**
- P-3 RVP-8 radar upgrade prior to hurricane season - **in work**
- Induct 43 into Navy FRCSE for SSI and PDM.
- Plan for overhaul of G-IV engines in FY13



# 66<sup>th</sup> Interagency Hurricane Conference 2012

## QUESTIONS?

