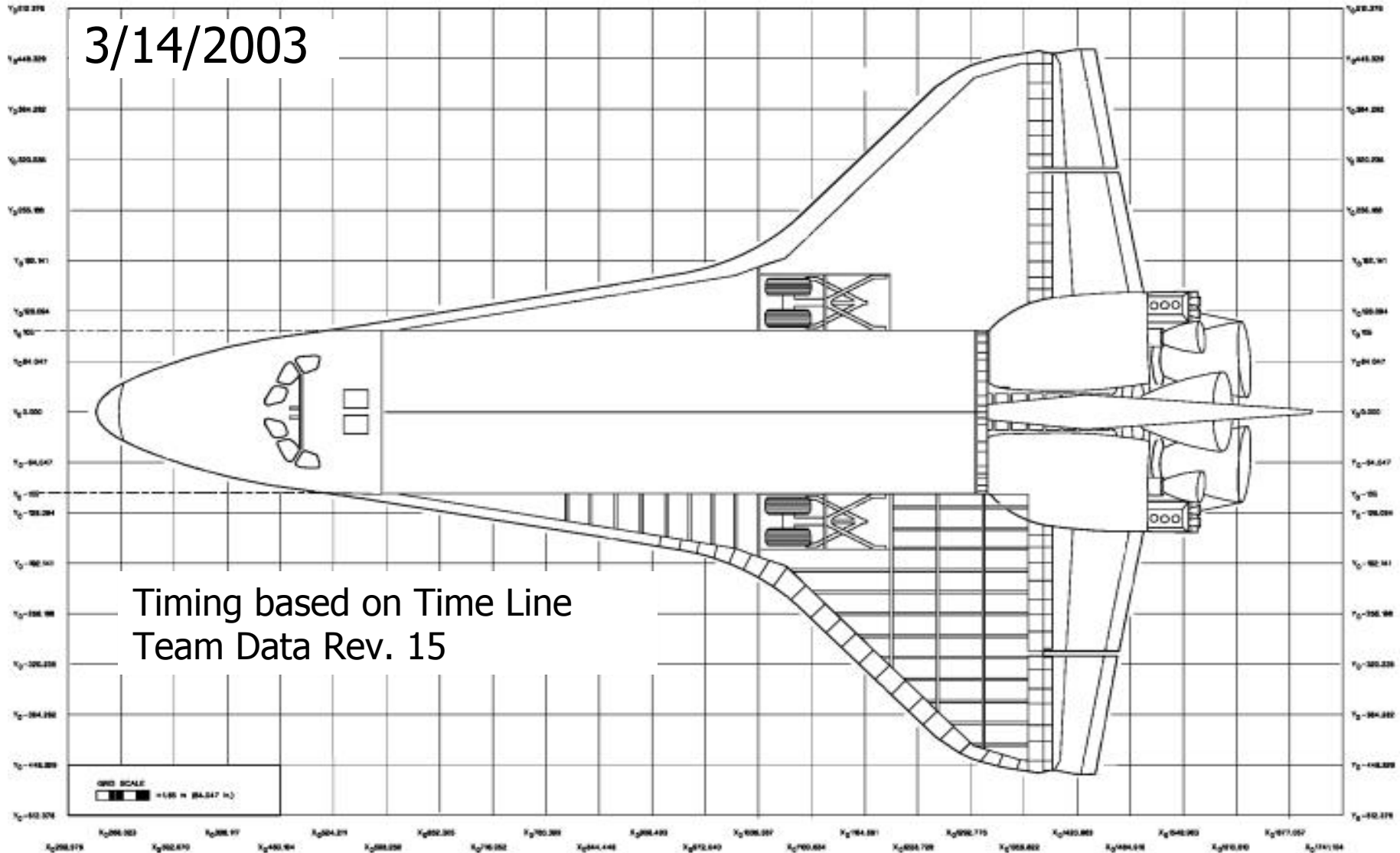




2D Graphical Event Sequence





Introduction

- **The graphical event sequence is a visual time history of relevant sensor information in the left wing and wheel well areas**
 - Covers approximately 8 minute timeframe, from first anomalous sensor reading through last available telemetry
 - Documents known anomalous sensor responses per the latest revision of events timeline from OVEWG Data Review and Timeline team
- **Information contained in the graphical event sequence include :**
 - Sensor location on orbiter and its associated wire bundle in X-Y plane
 - Wire bundle routing
 - Description of each anomalous sensor event
 - Time annotation by (a) GMT, (b) time relative to LOS, (c) time history bar, and (d) ground track
 - Graphical display of temperature rise (based on delta temperature from point it is determined to be anomalous)

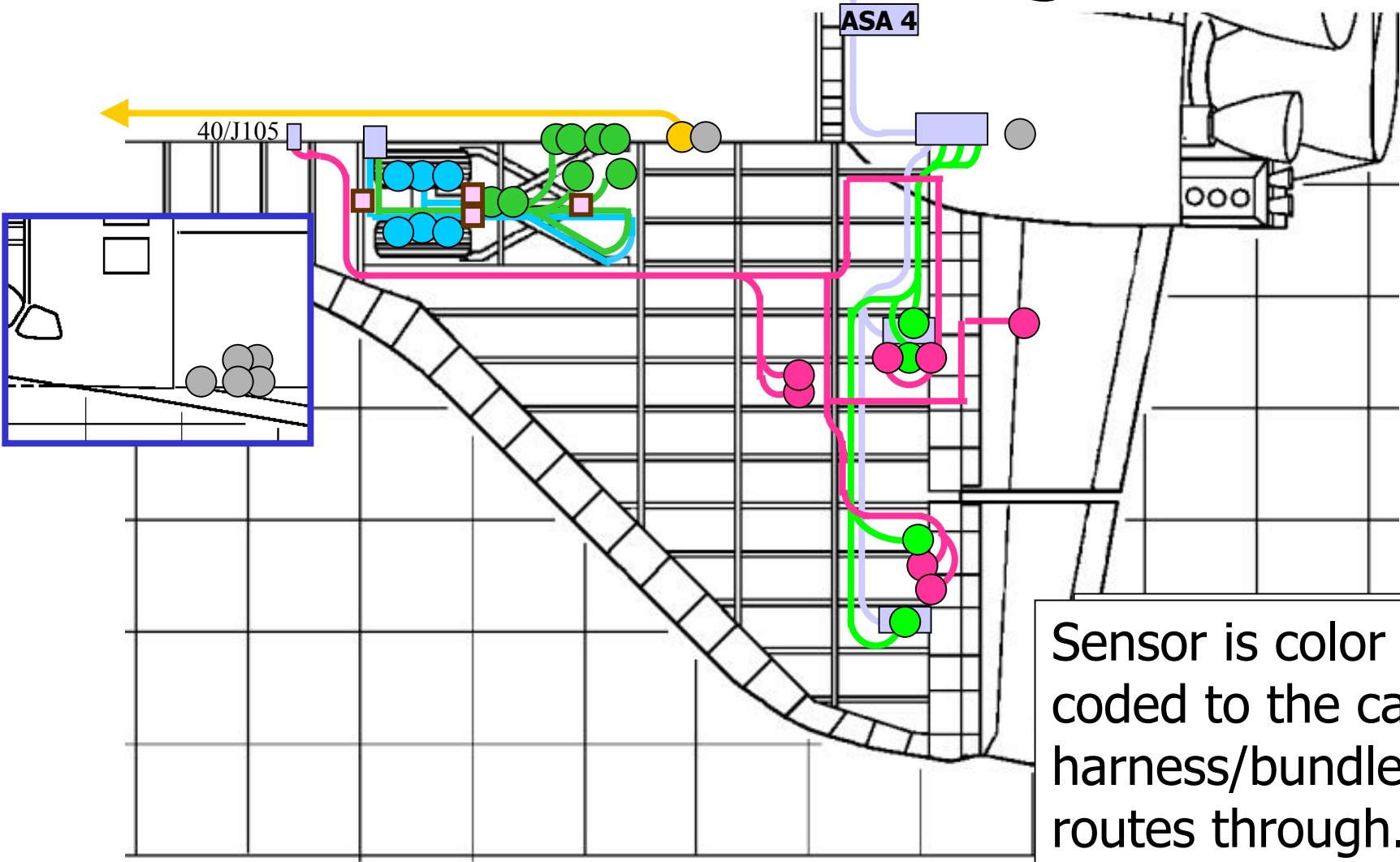


GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Sensor Cabling



Sensor is color coded to the cable harness/bundle it routes through.

18.493 X₀1036.587 X₀1184.881 X₀1292.775 X₀1420.869 X₀1548.963



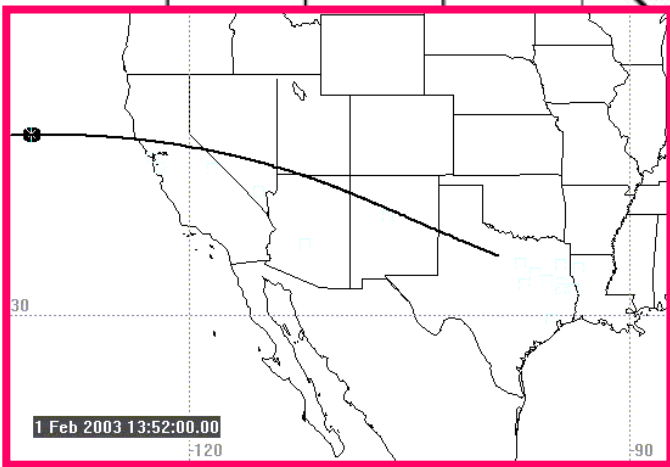
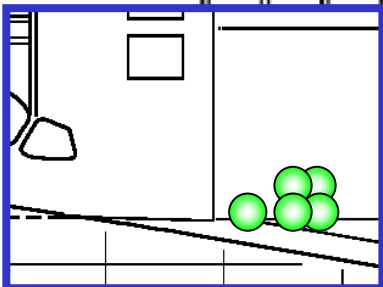
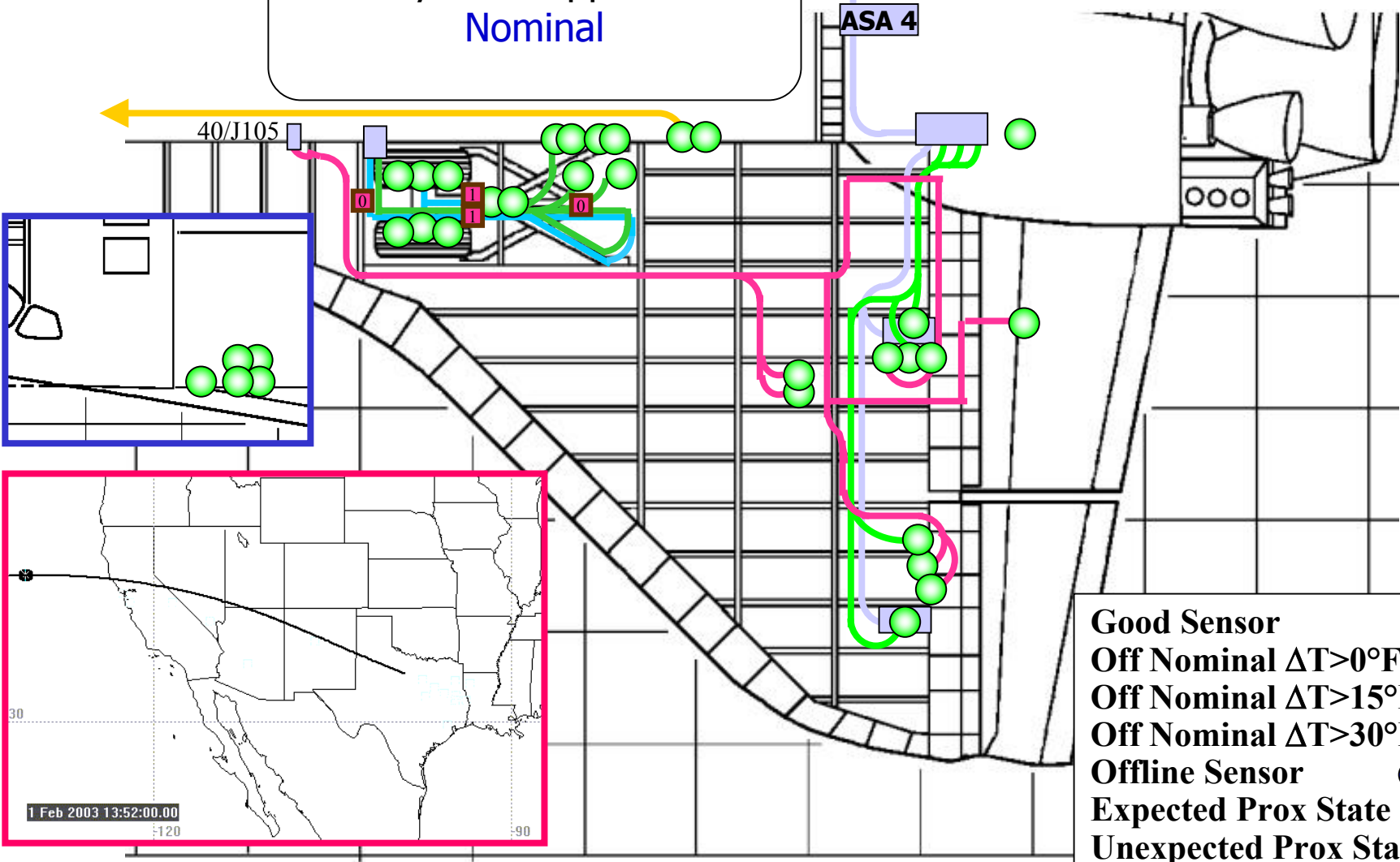
LOS 13:59:32

GMT 13:52:00

GMT 14:00:00

Systems appear Nominal

13:52:00 (LOS -7:32)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



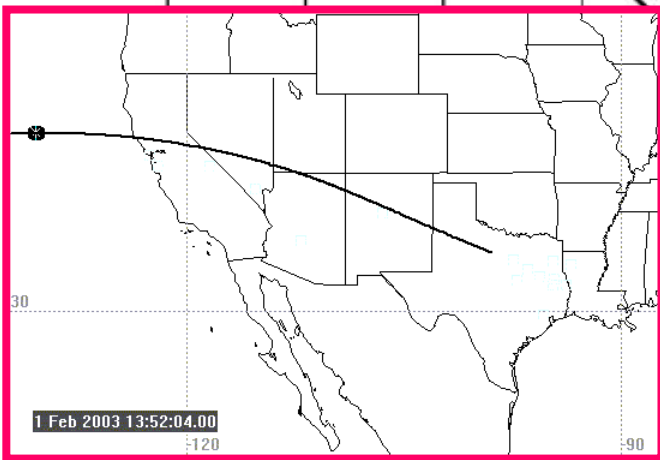
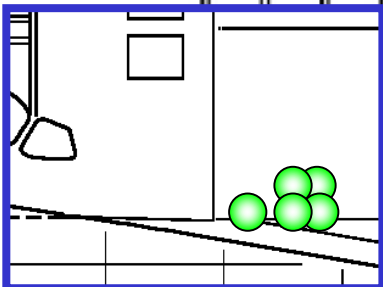
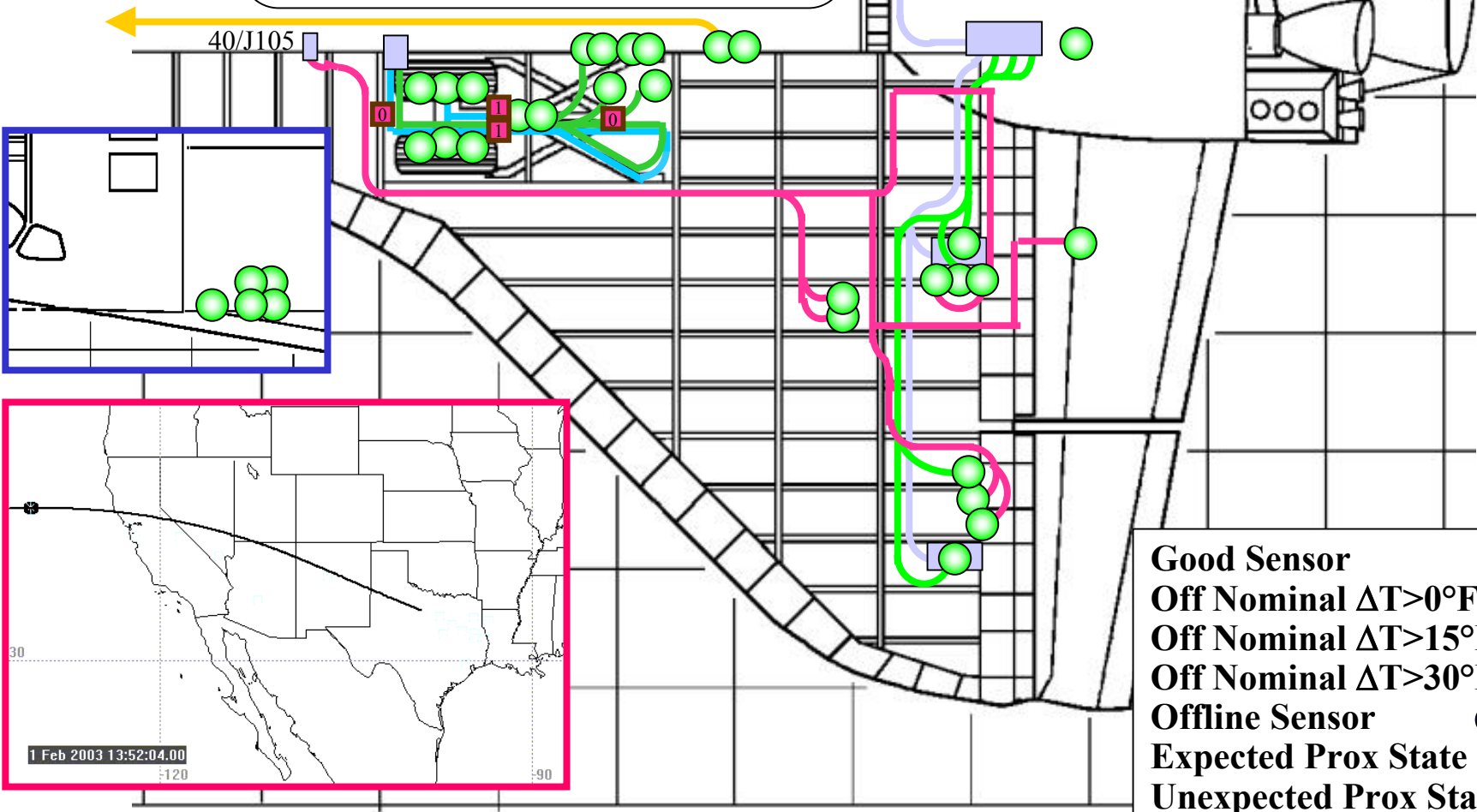
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

First clear indication of off-Nominal aero increments

13:52:05 (LOS -7:27)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

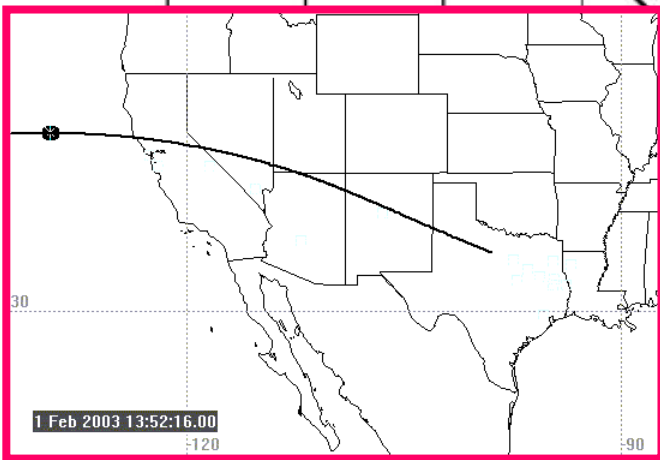
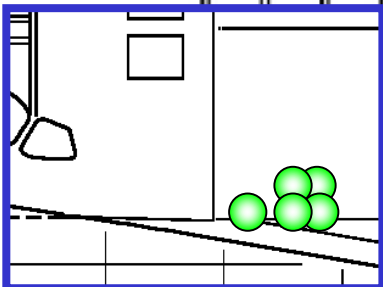
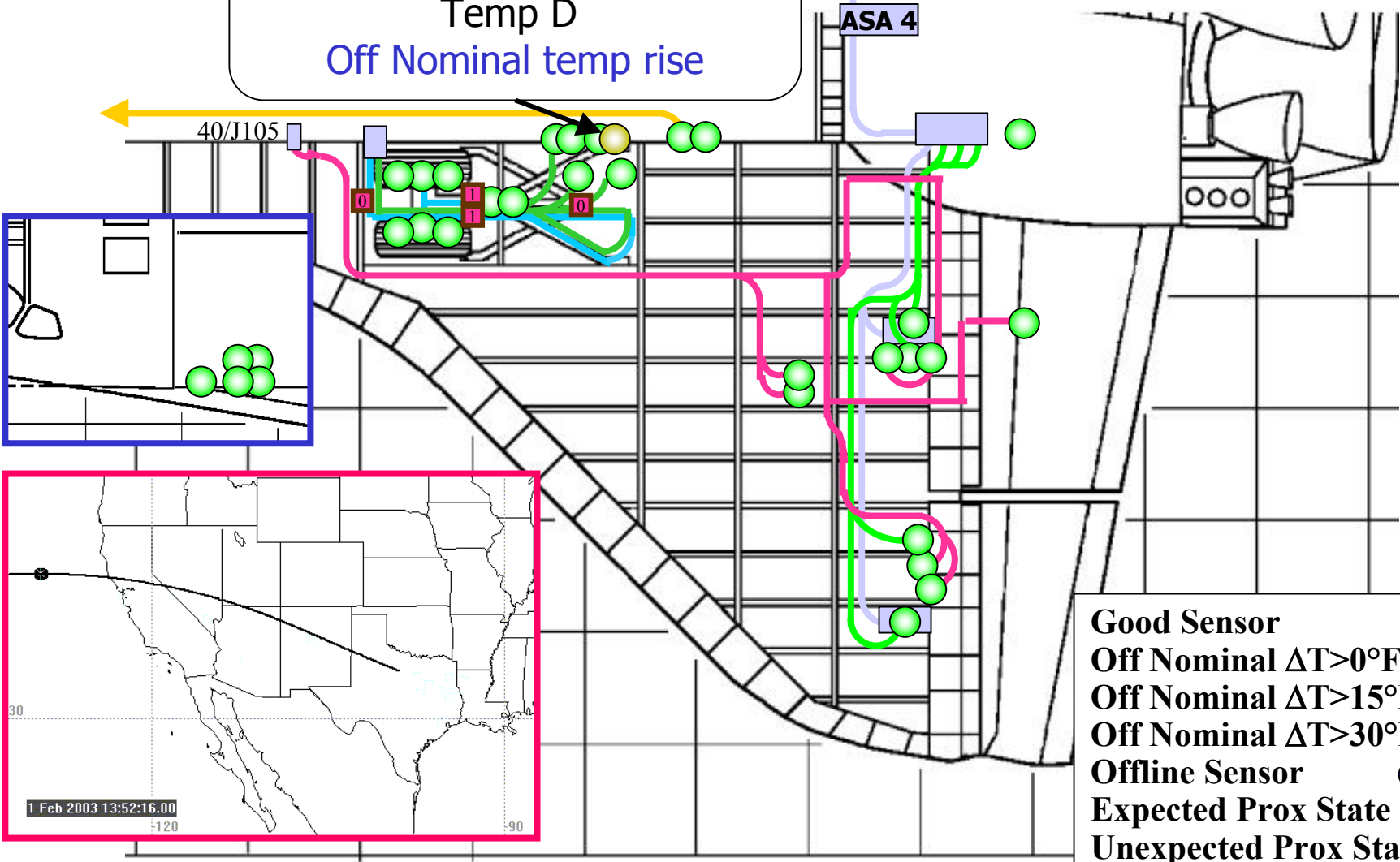
18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V58T1703A
 Left Main Gear Brake Line
 Temp D
 Off Nominal temp rise

13:52:17 (LOS -7:15)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

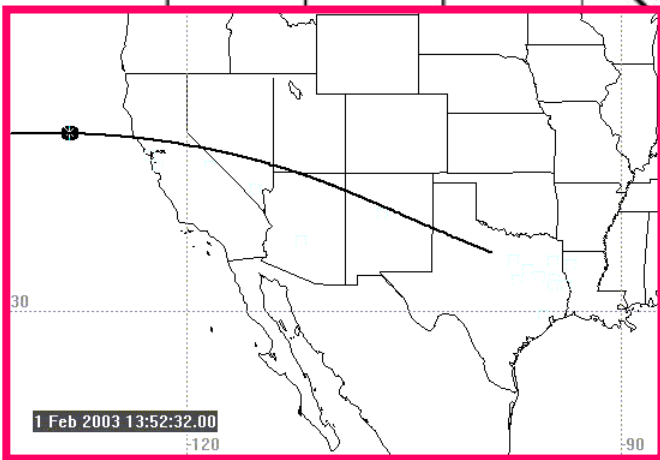
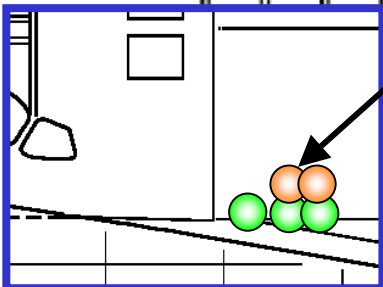
GMT 14:00:00

V62T0440A
V62T0439A
Supply Water Dump Nozzle A/B
Off Nominal temp rise rate

13:52:32 (LOS -7:00)

ASA 4

40/J105



1 Feb 2003 13:52:32.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 8.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

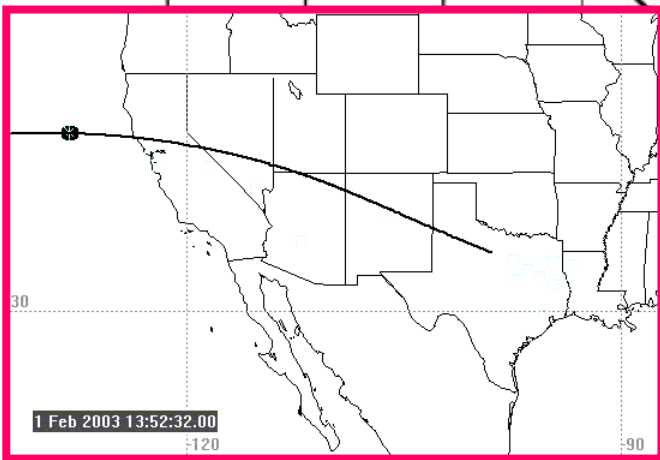
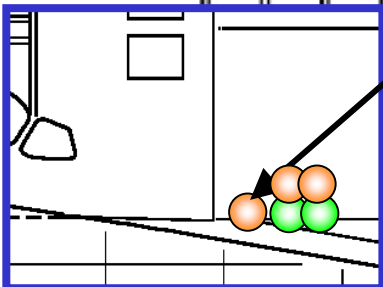
GMT 14:00:00

V62T0551A
Vacuum Vent
Off Nominal temp rise rate

13:52:32 (LOS -7:00)

ASA 4

40/J105



1 Feb 2003 13:52:32.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

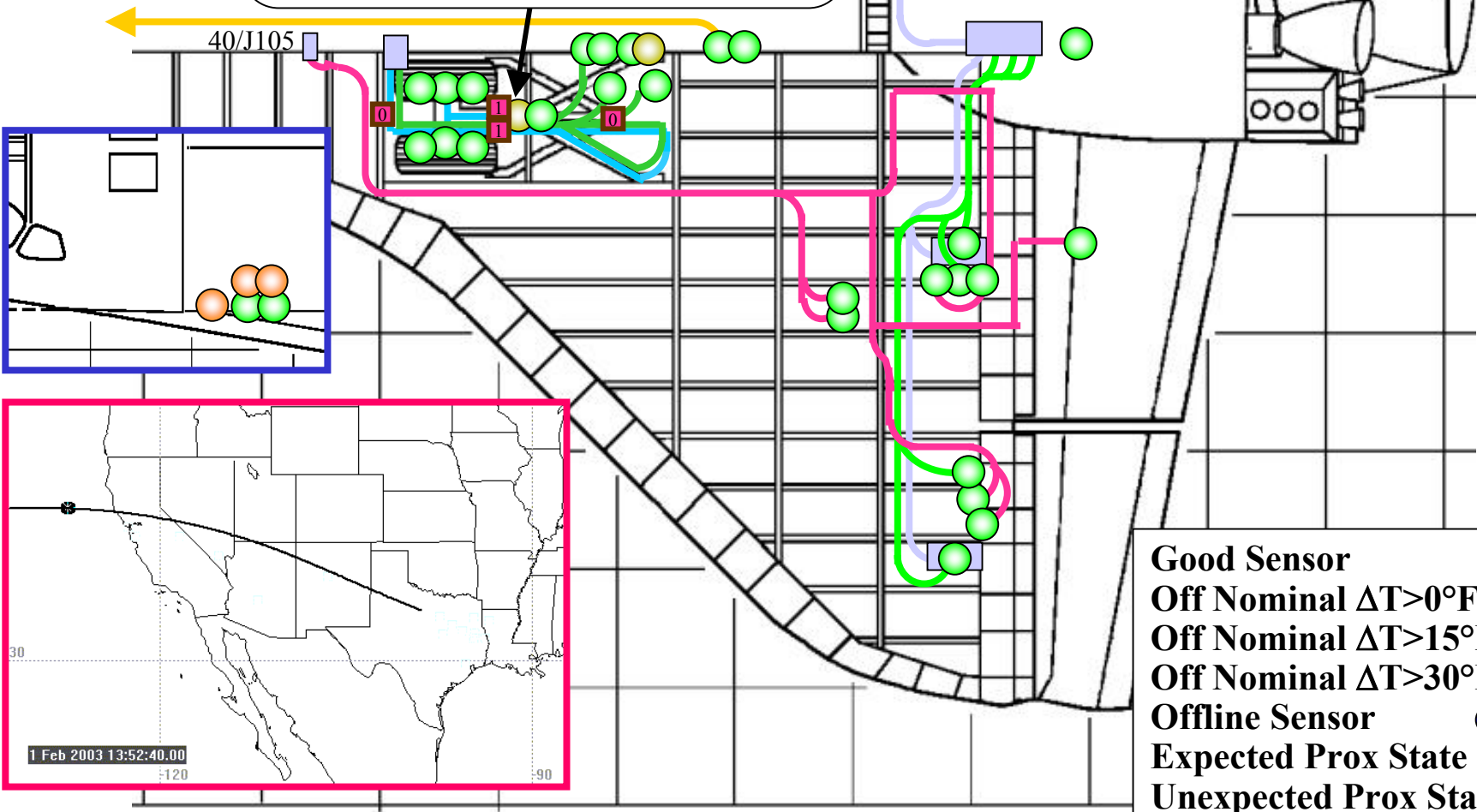
X₀ 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V58T1700A
 Left Main Gear Brake Line
 Temp A
 Off Nominal temp rise

13:52:41 (LOS -6:51)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀18.493 X₀1036.587 X₀1184.881 X₀1292.775 X₀1420.869 X₀1548.963



GMT 13:52:00

LOS 13:59:32

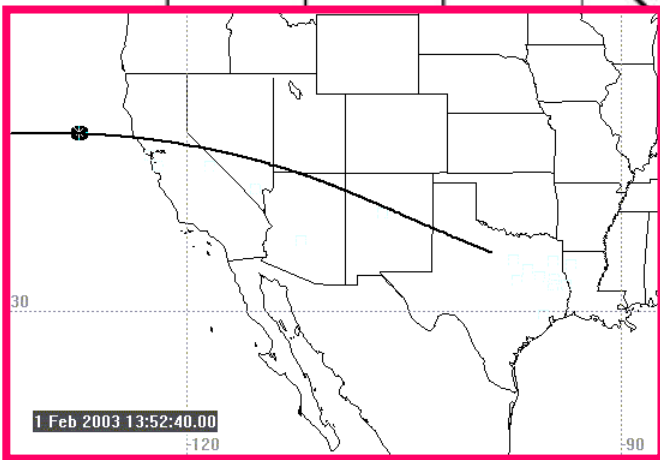
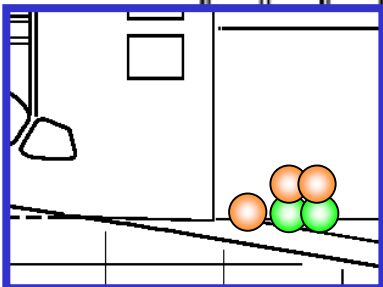
GMT 14:00:00

V58T1702A
Left Main Gear Brake Line
Temp C
Off Nominal temp rise

13:52:41 (LOS -6:51)

ASA 4

40/J105



1 Feb 2003 13:52:40.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀18.493

X₀1036.587

X₀1184.881

X₀1292.775

X₀1420.869

X₀1548.963



GMT 13:52:00

LOS 13:59:32

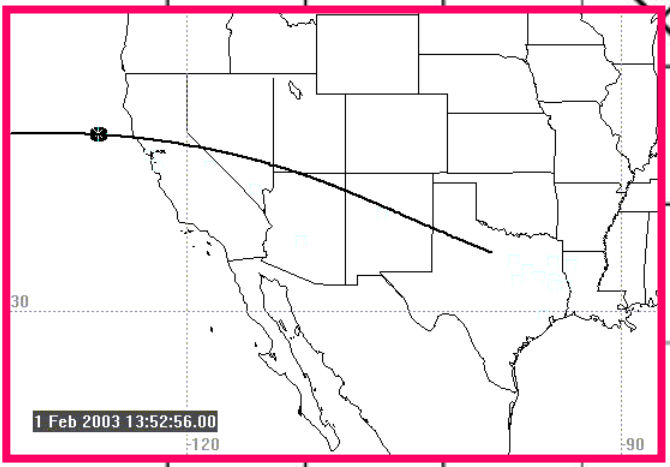
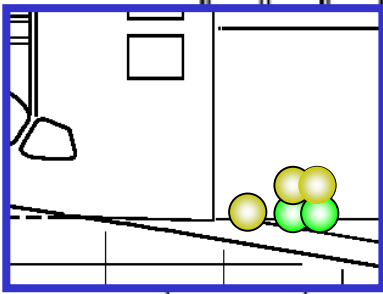
GMT 14:00:00

V09T1006A
Left Inboard Elevon Lower
Skin Temp
Shows wire damage trend

13:52:56 (LOS -6:36)

ASA 4

40/J105



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

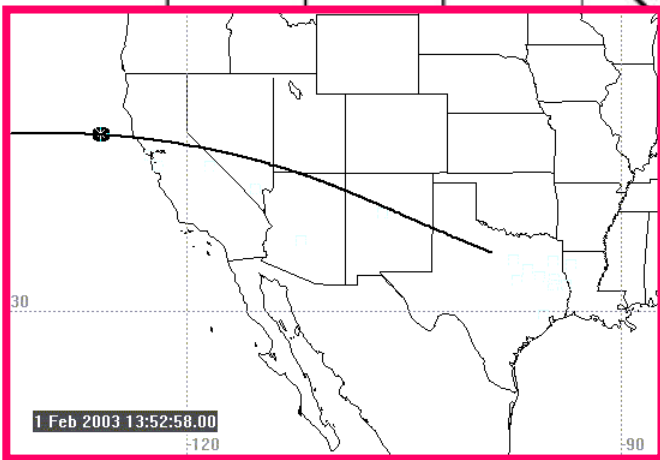
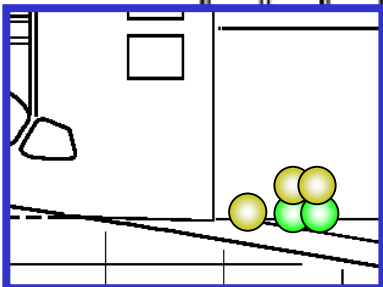
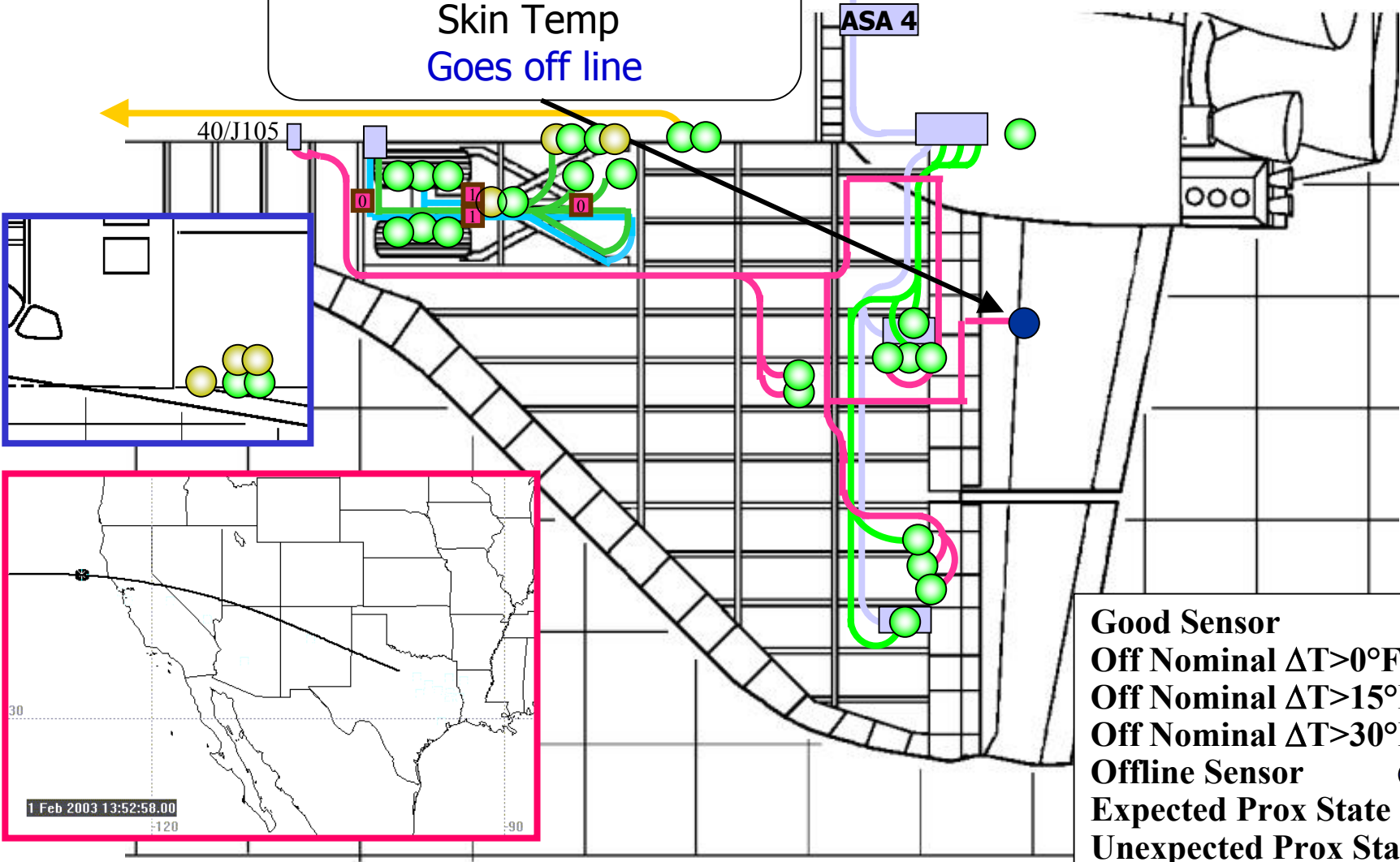
18.493 X₀1036.587 X₀1184.881 X₀1292.775 X₀1420.869 X₀1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V09T1006A
 Left Inboard Elevon Lower
 Skin Temp
 Goes off line

13:52:59 (LOS -6:33)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



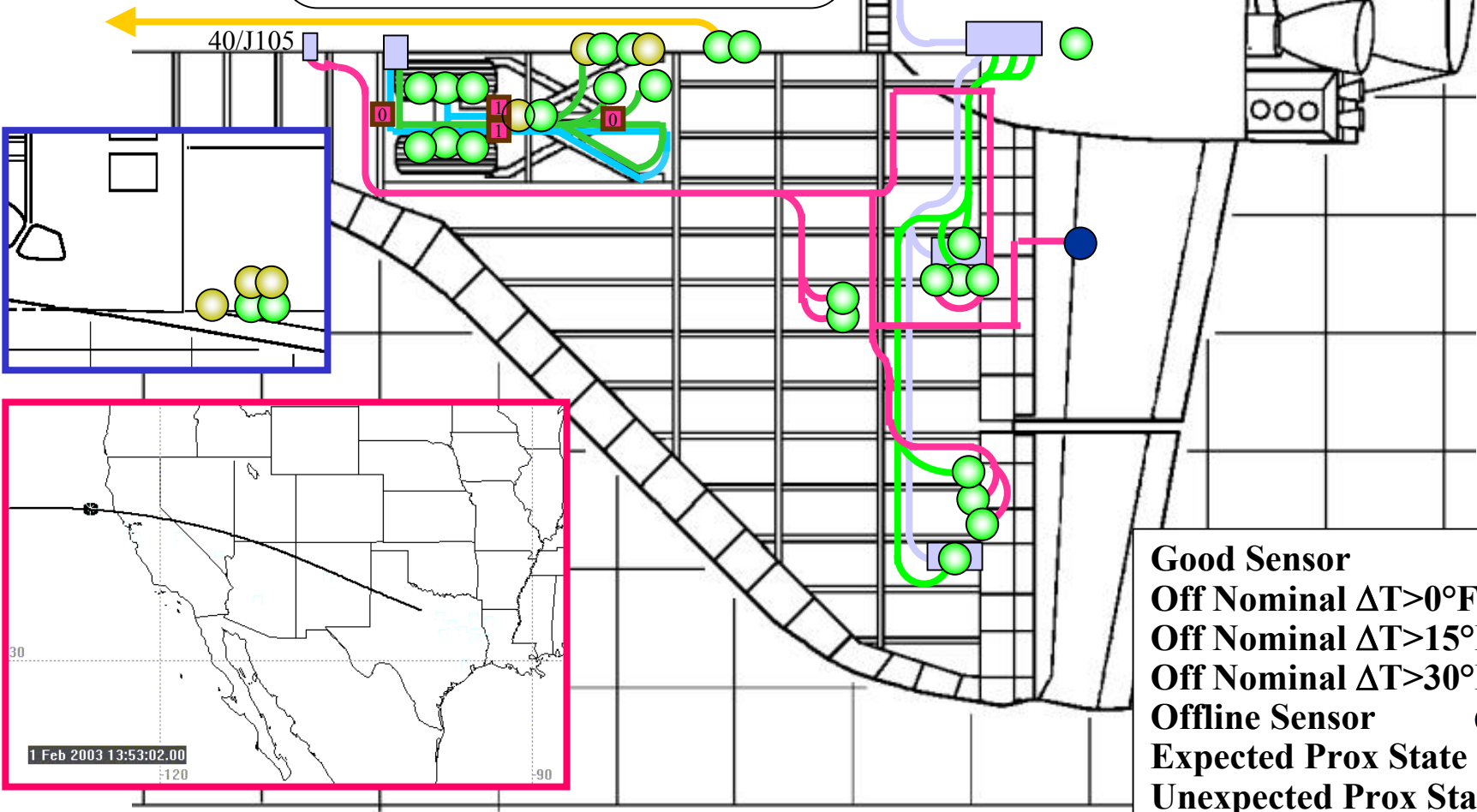
GMT 13:52:00

LOS 13:59:32

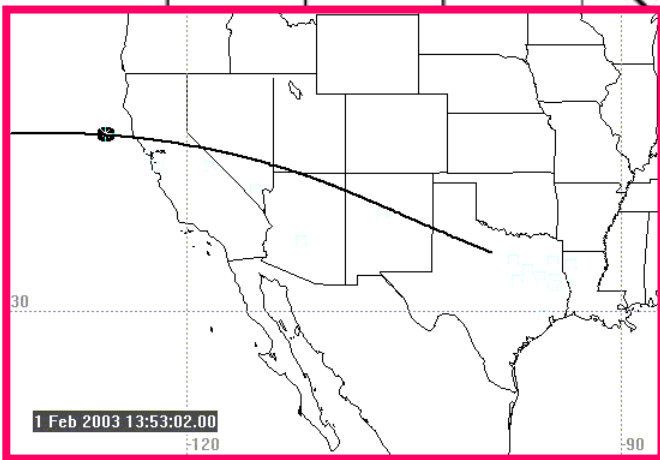
GMT 14:00:00

First clear indication of off-nominal rolling moment increment

13:53:01 (LOS -6:31)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



1 Feb 2003 13:53:02.00

X₀ 18.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



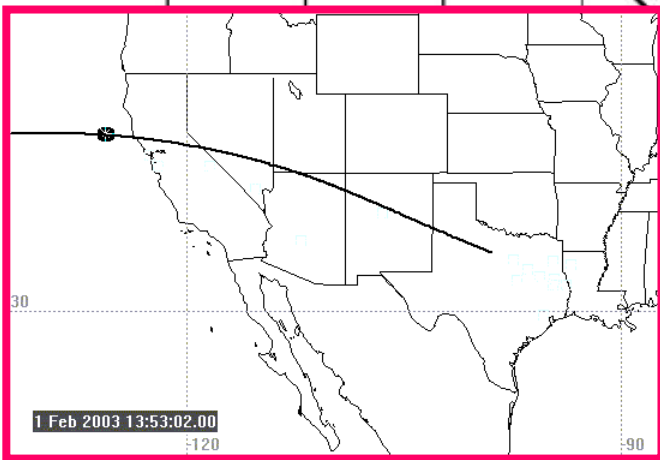
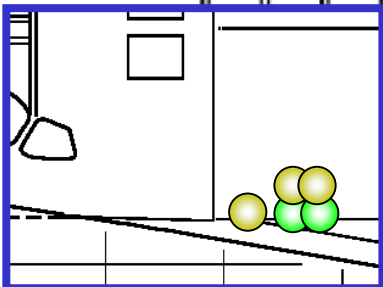
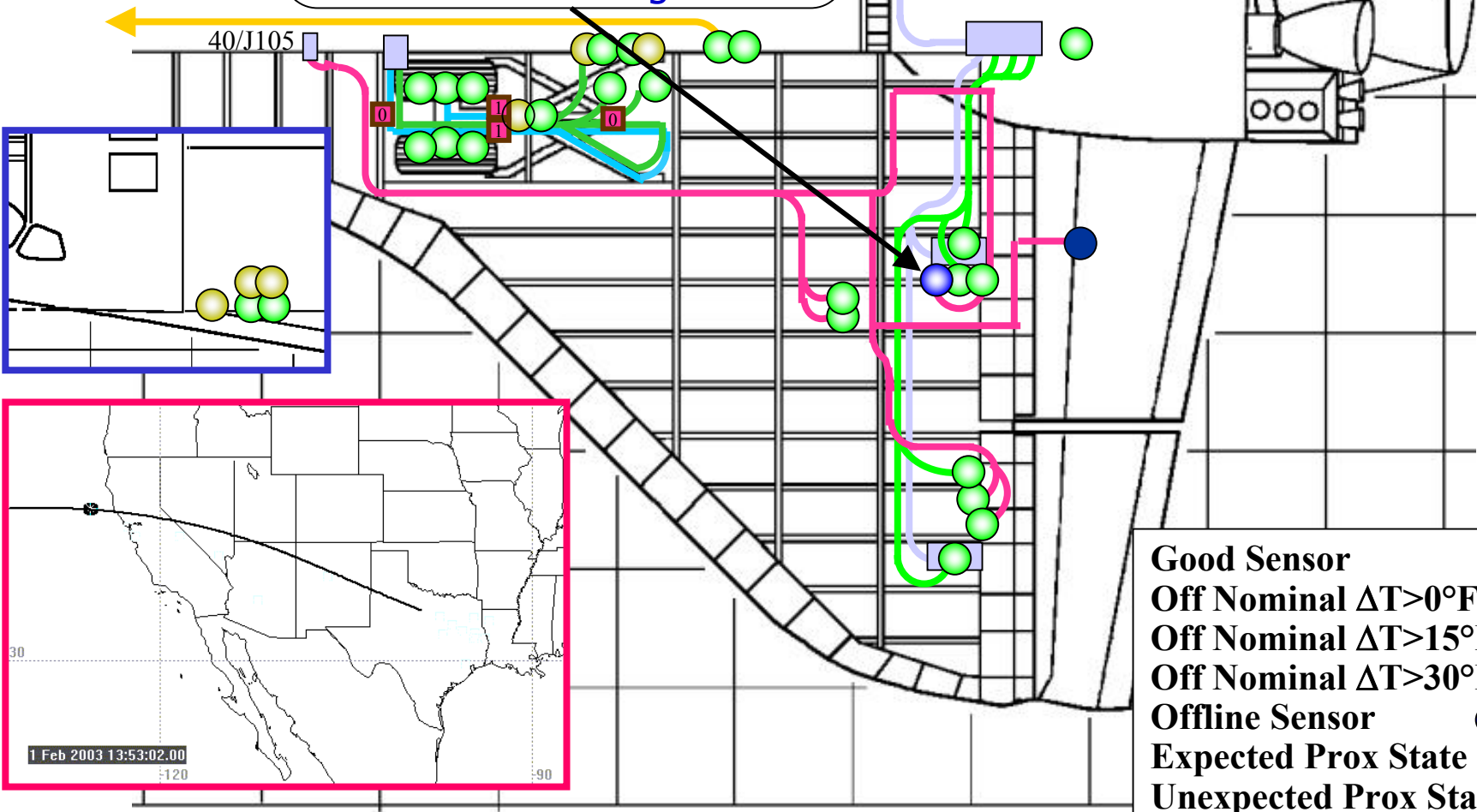
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

V58T0157A
Hyd Sys 1 Left Inboard Elevon
Actuator Return Line Temp
Shows wire damage trend

13:53:02 (LOS -6:30)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



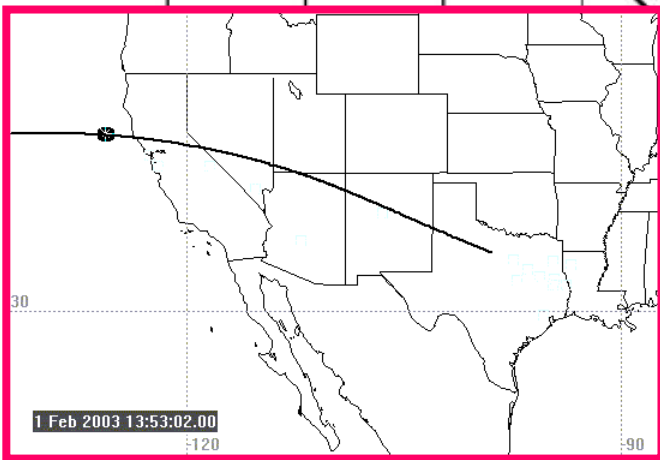
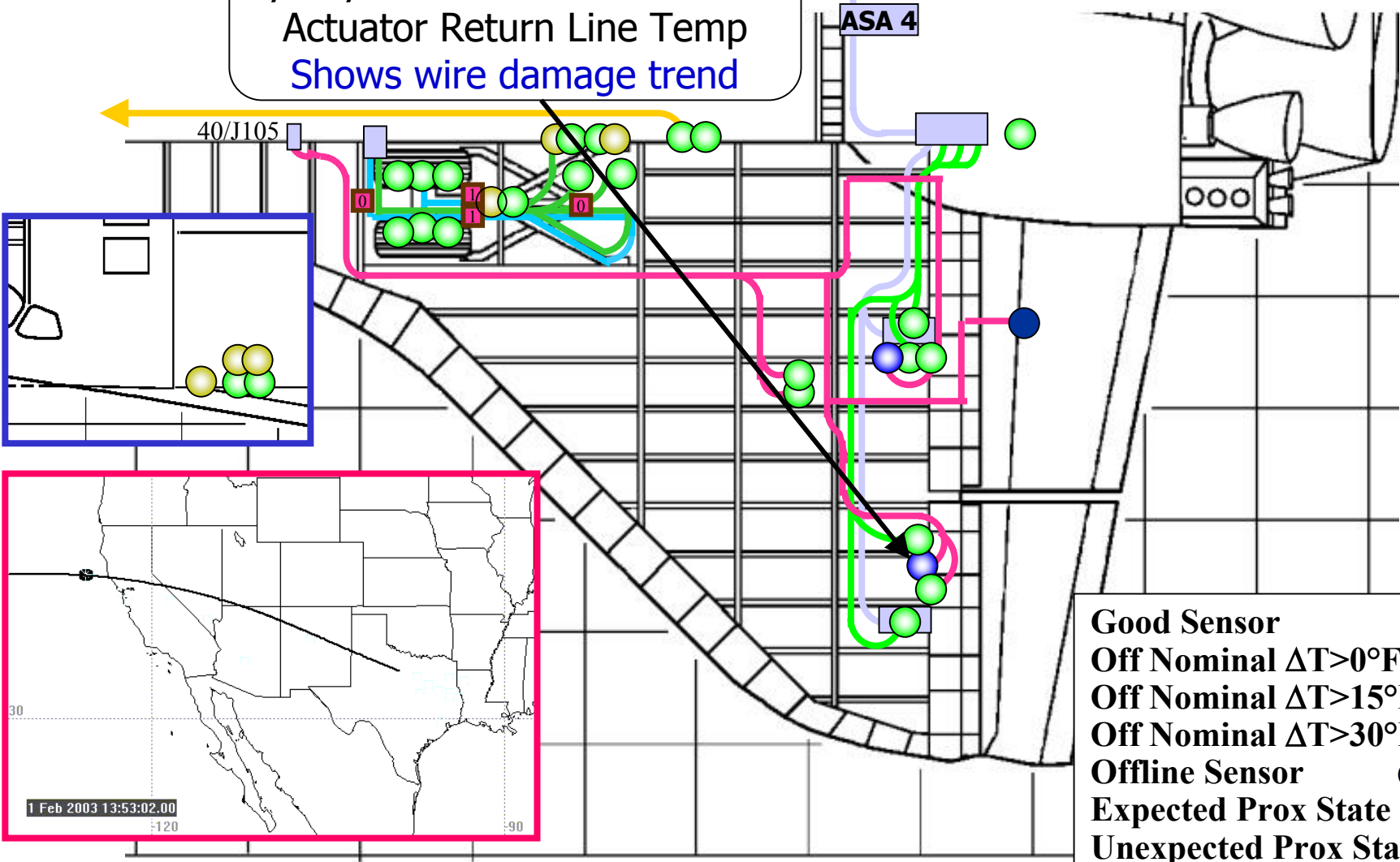
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

V58T0394A
Hyd Sys 3 Left Outboard Elevon
Actuator Return Line Temp
Shows wire damage trend

13:53:02 (LOS -6:30)



1 Feb 2003 13:53:02.00

X₀18.493

X₀1036.587

X₀1184.881

X₀1292.775

X₀1420.869

X₀1548.963



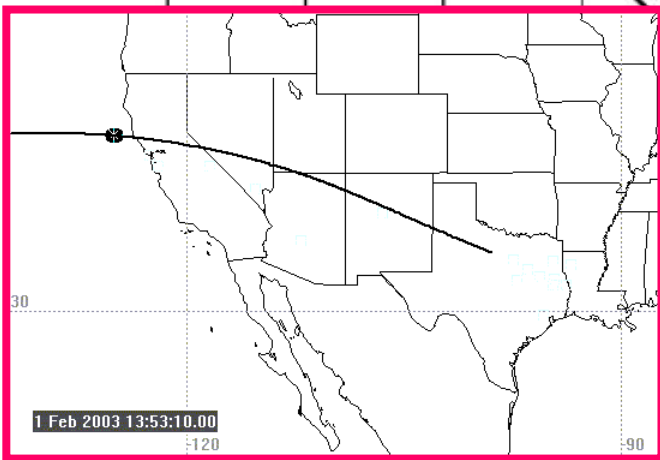
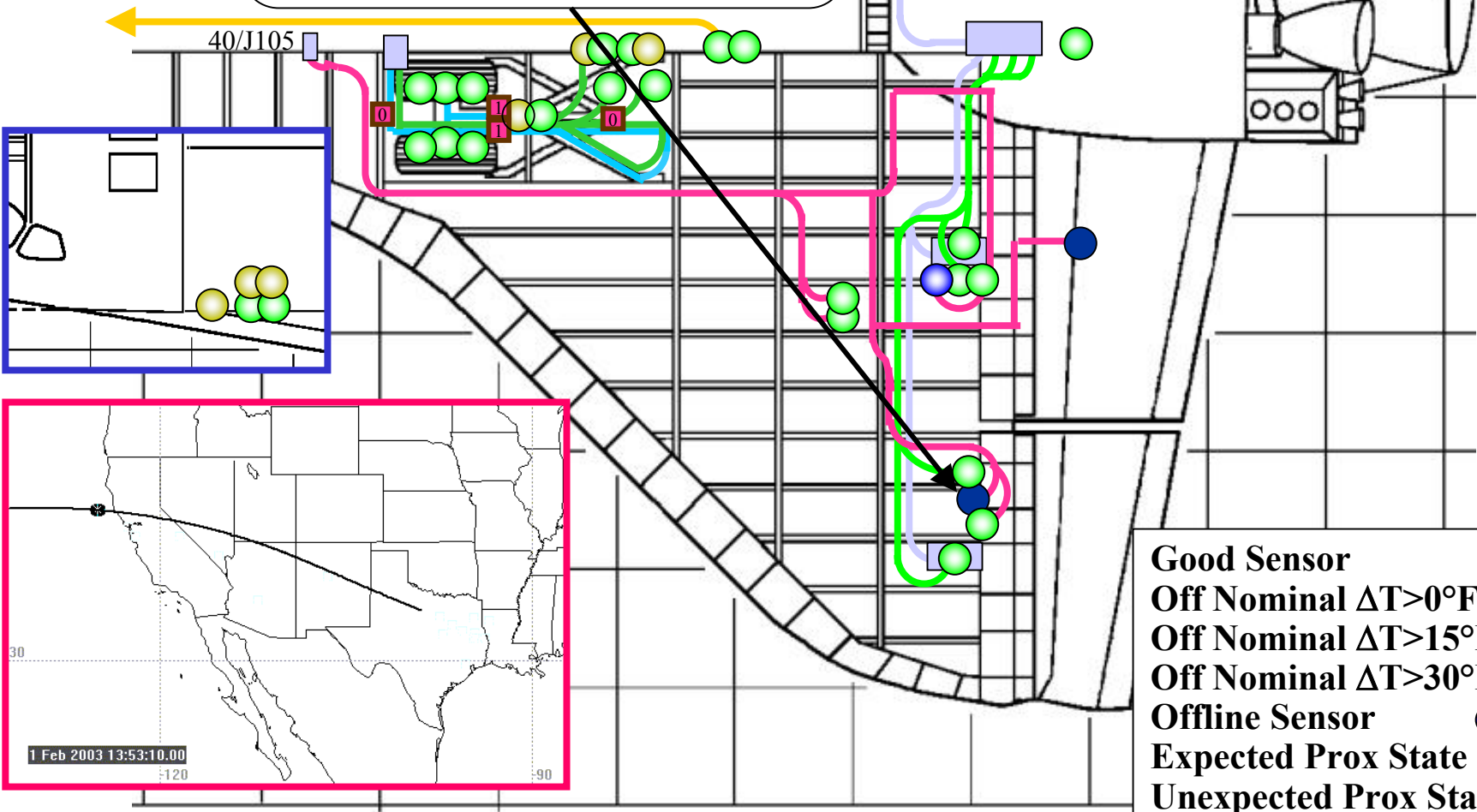
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

V58T0394A
Hyd Sys 3 Left Outboard Elevon
Actuator Return Line Temp
Goes off line

13:53:10 (LOS -6:22)



1 Feb 2003 13:53:10.00

X₀ 18.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

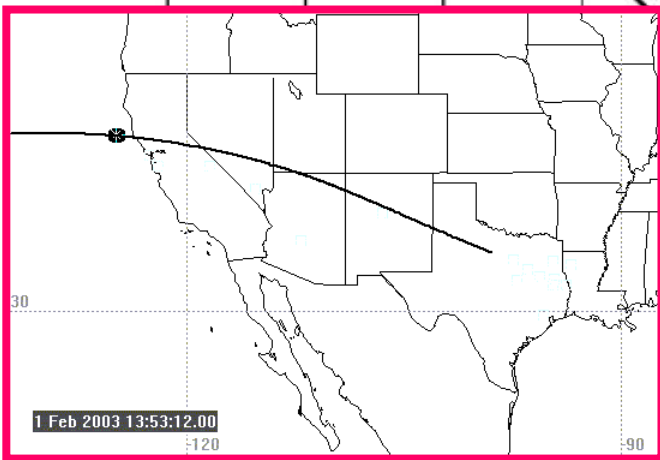
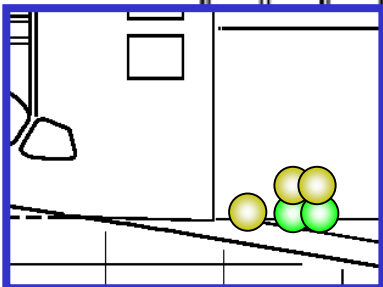
GMT 14:00:00

V58T0157A
Hyd Sys 1 Left Inboard Elevon
Actuator Return Line Temp
Goes off line

13:53:11 (LOS -6:21)

ASA 4

40/J105



1 Feb 2003 13:53:12.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State
- Unexpected Prox State

X₀ 18.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



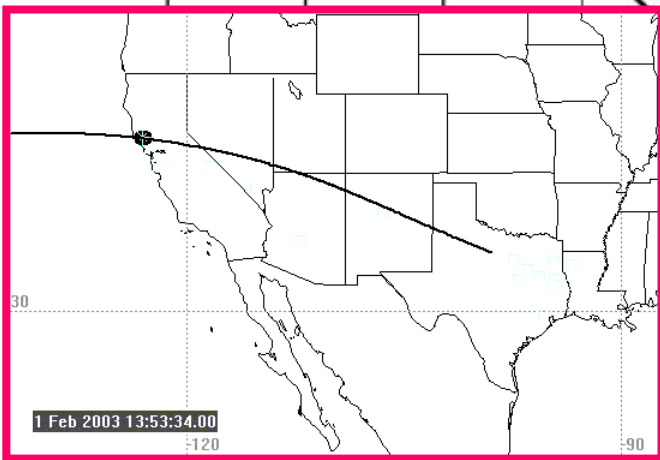
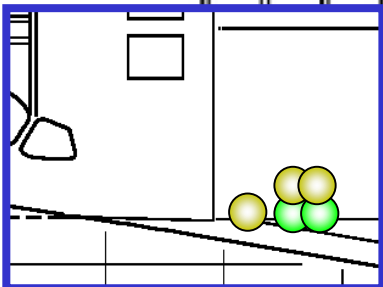
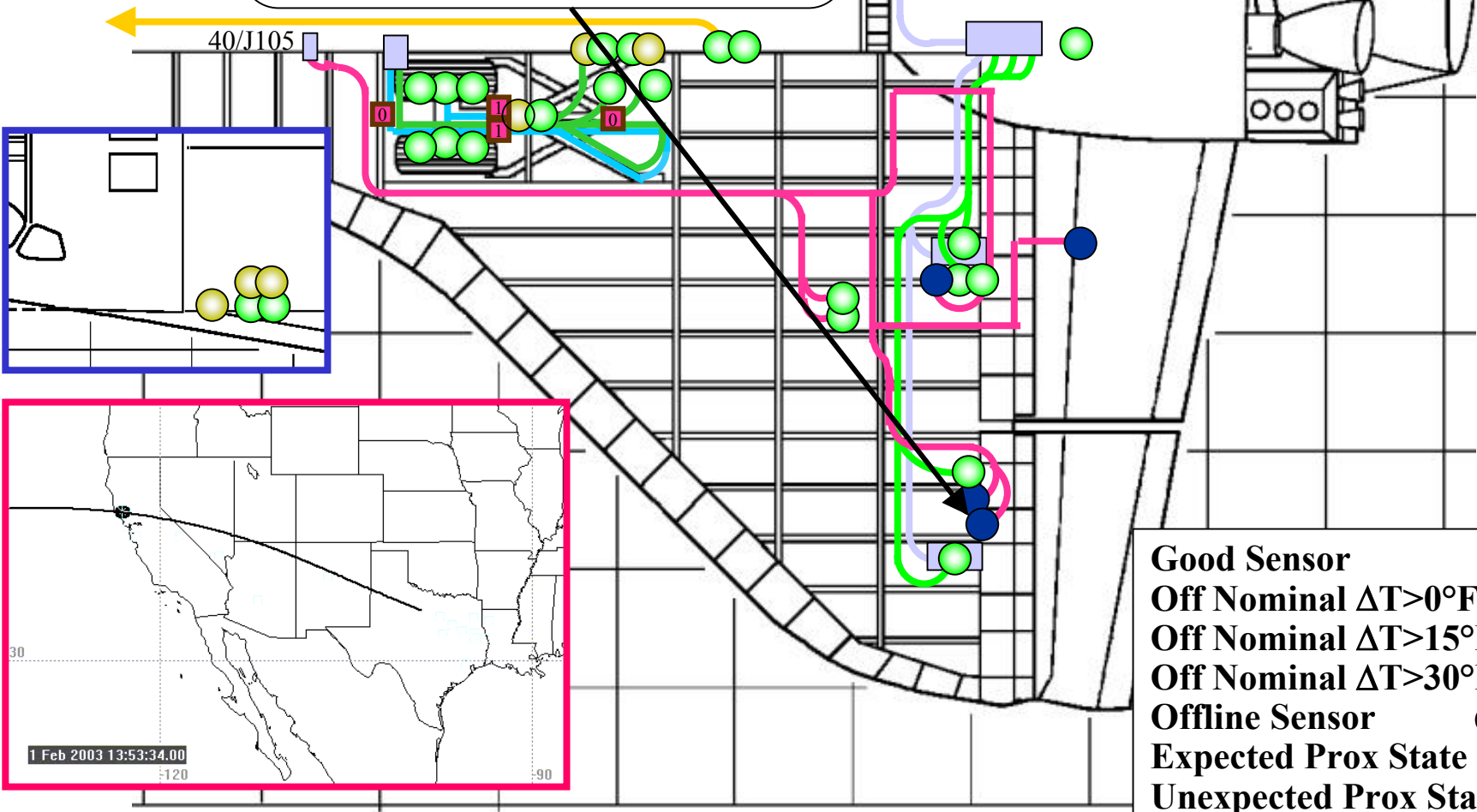
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

V58T0193A
Hyd Sys 1 Left Outboard Elevon
Actuator Return Line Temp
Goes off line

13:53:34 (LOS -5:58)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



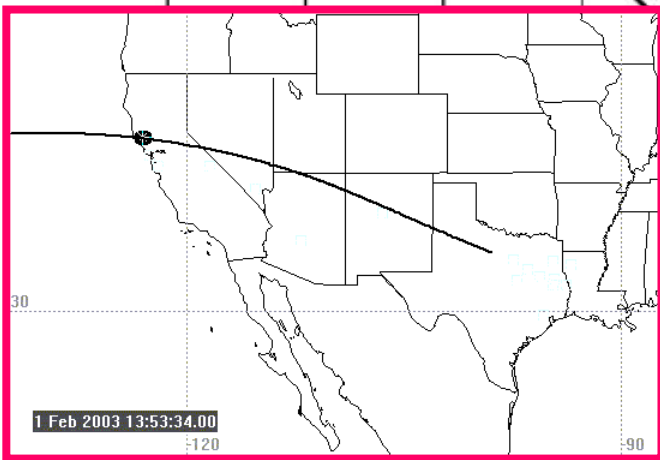
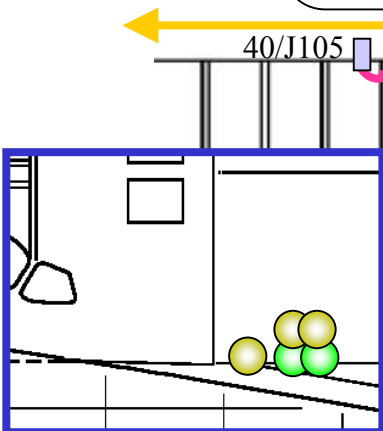
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

V58T0257A
Hyd Sys 2 Left Inboard Elevon
Actuator Return Line Temp
Shows wire damage trend

13:53:34 (LOS -5:58)



1 Feb 2003 13:53:34.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



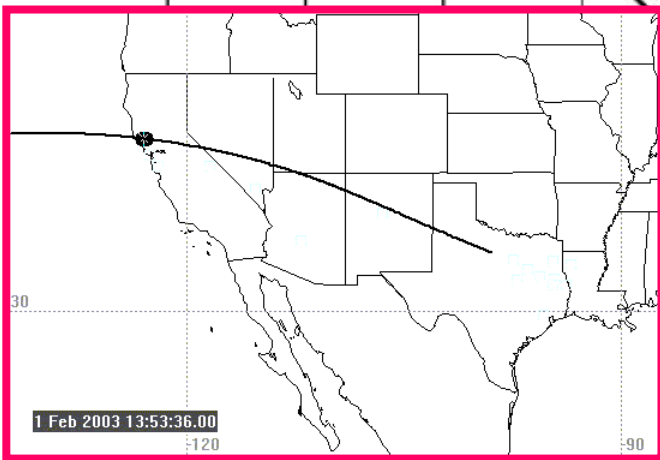
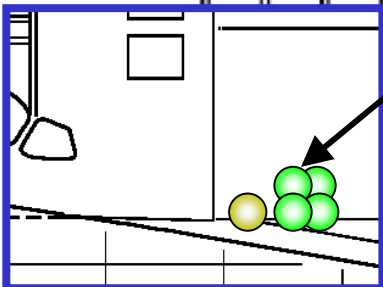
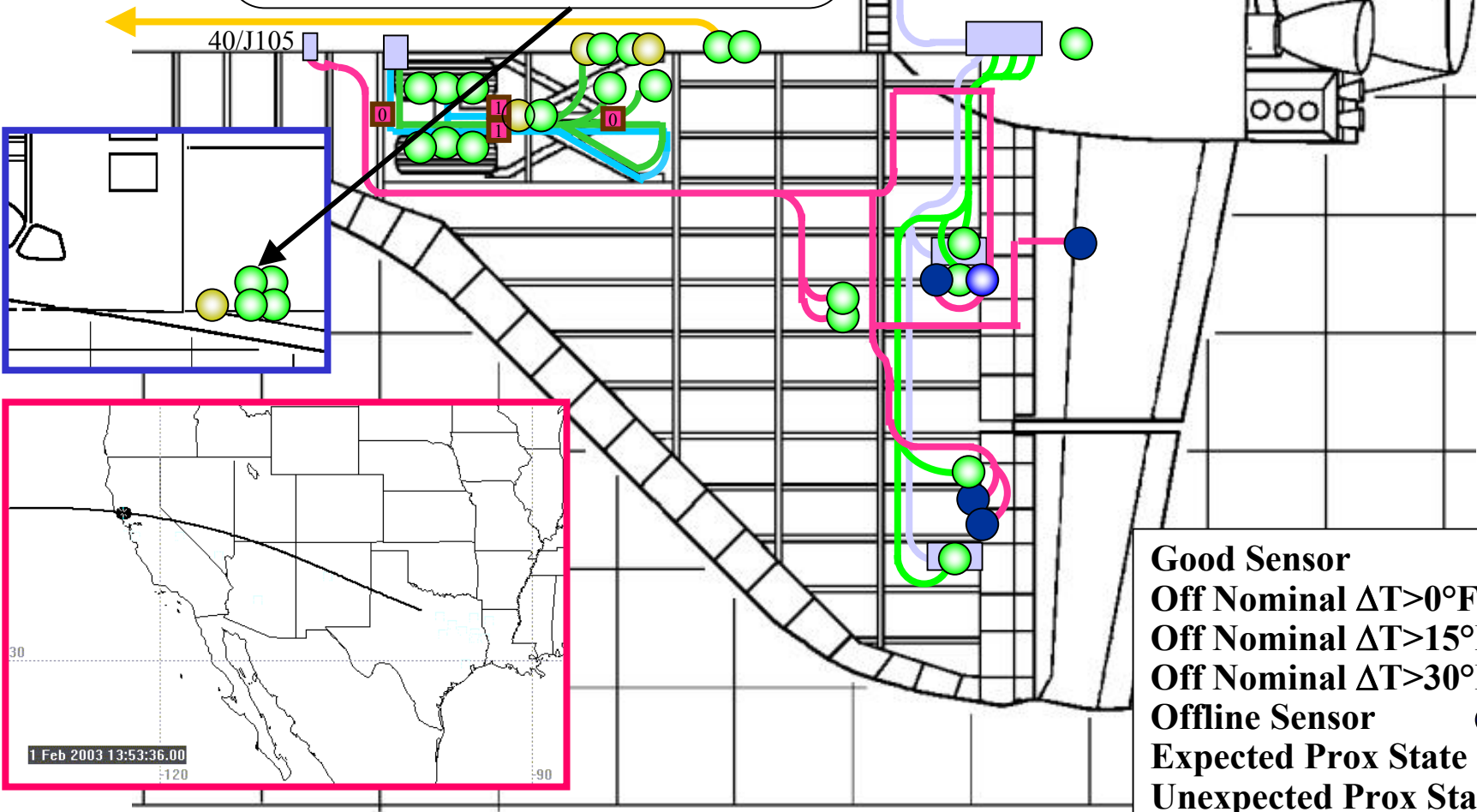
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

V62T0440A
V62T0439A
Supply Water Dump Nozzle A/B
Return to Nominal temp rise rate

13:53:35 (LOS -5:57)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

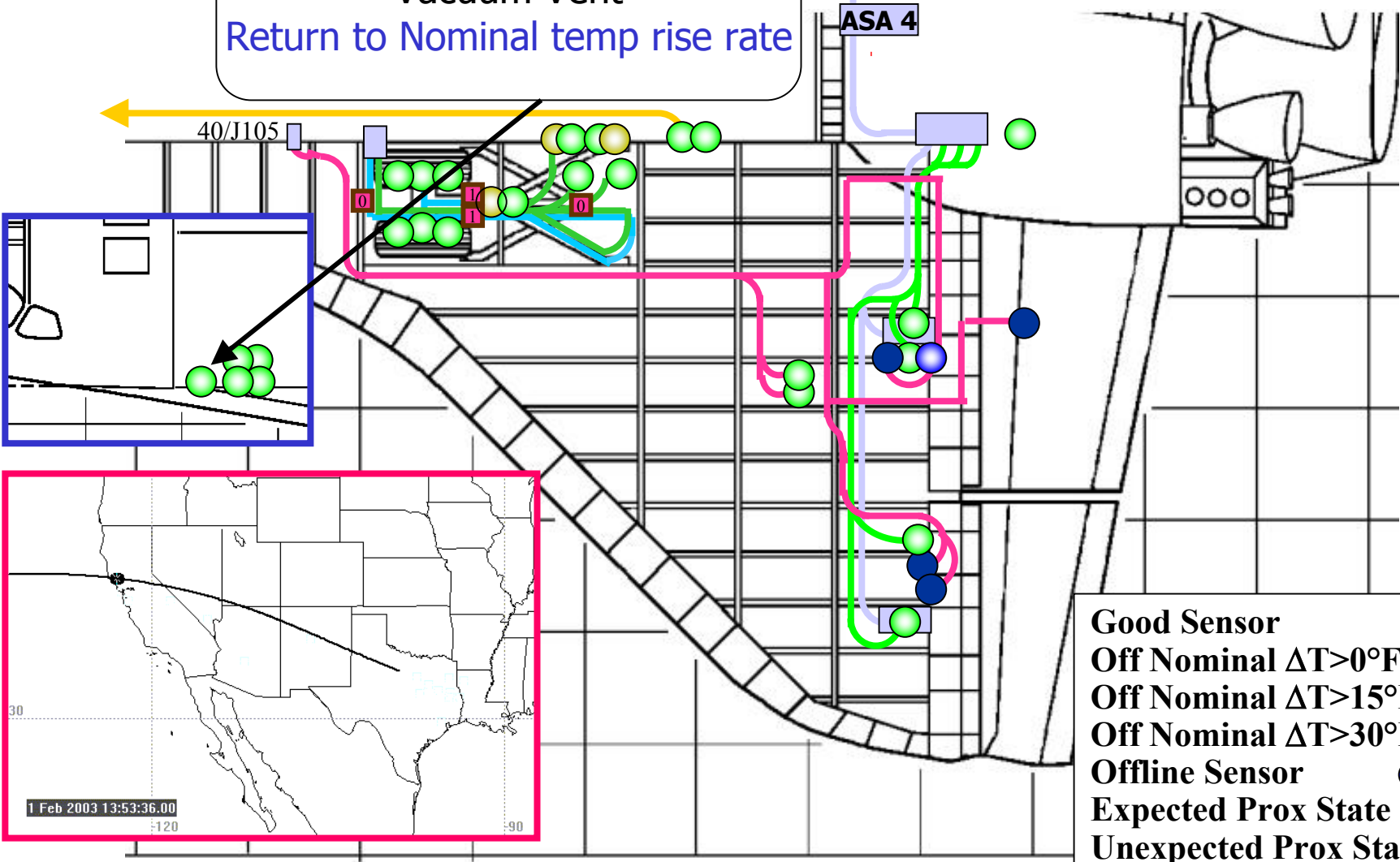
18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



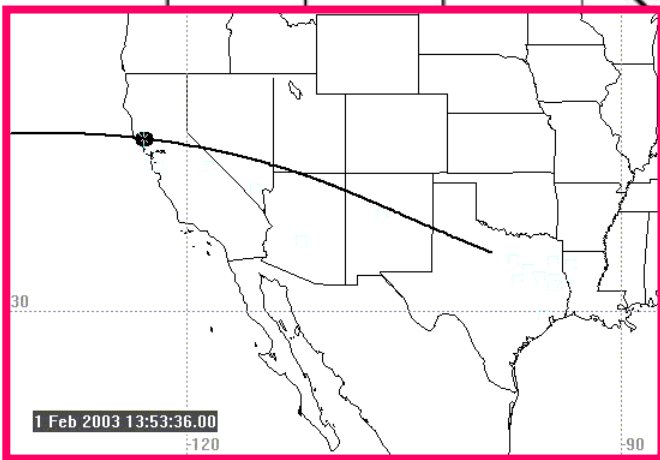
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V62T0551A
 Vacuum Vent
 Return to Nominal temp rise rate

13:53:35 (LOS -5:57)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



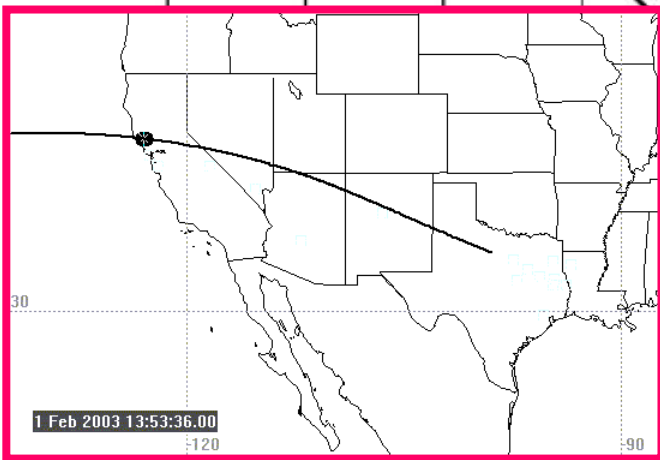
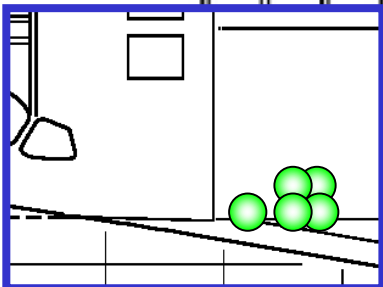
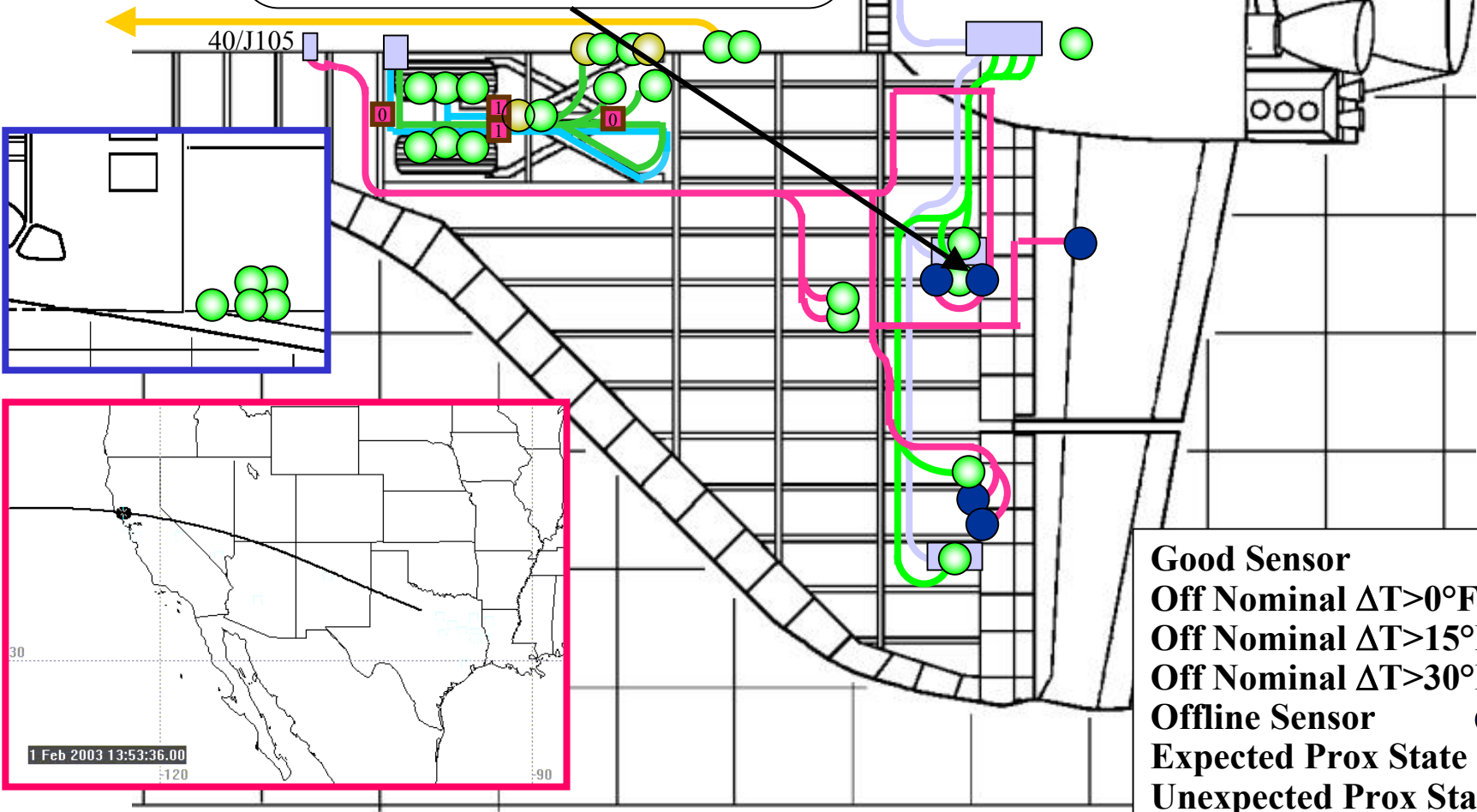
X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V58T0257A
 Hyd Sys 2 Left Inboard Elevon
 Actuator Return Line Temp
 Goes off line

13:53:36 (LOS -5:56)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



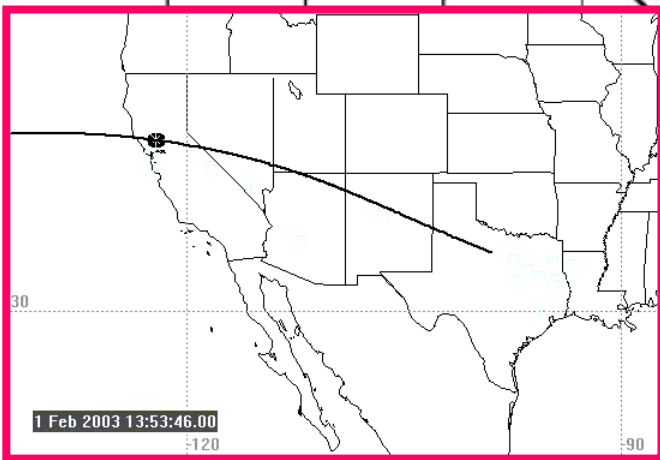
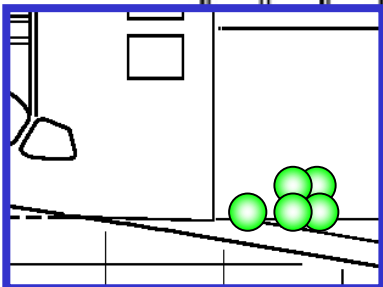
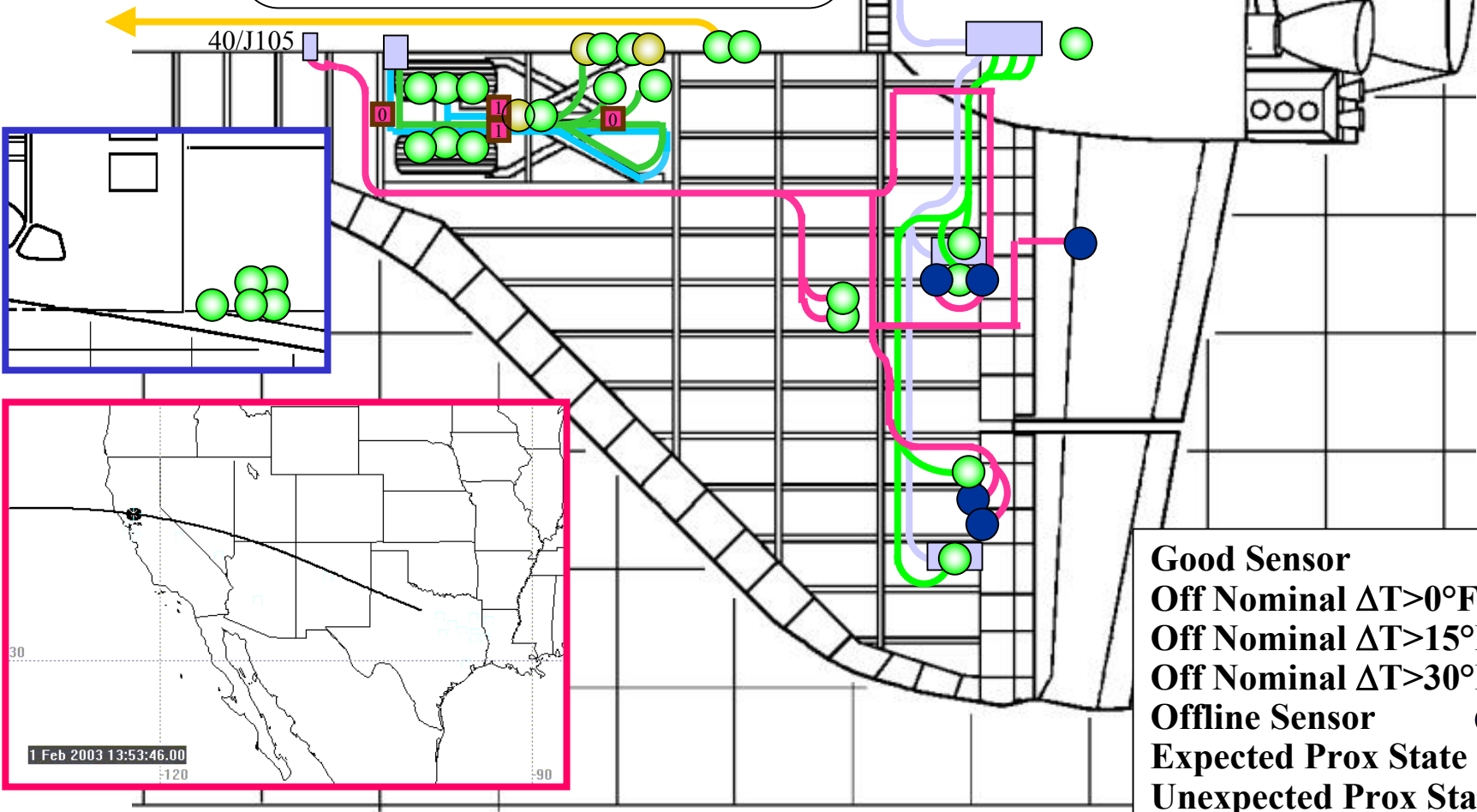
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

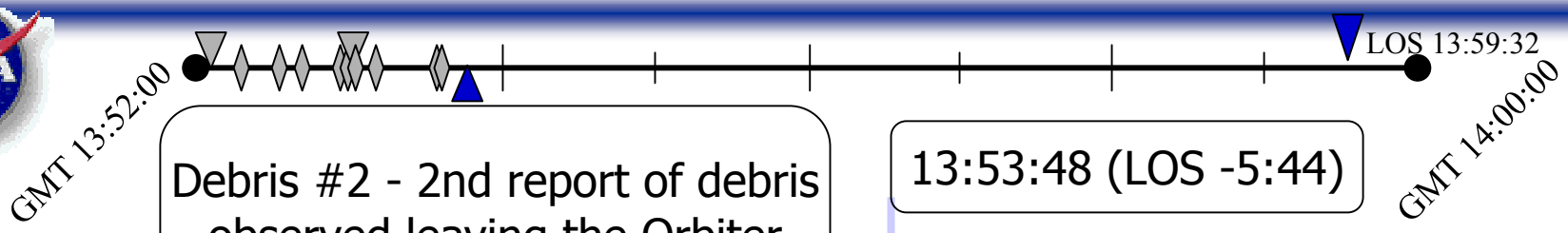
Debris #1 - 1st report of debris observed leaving the Orbiter (time is ± 2 sec)

13:53:46 (LOS -5:46)



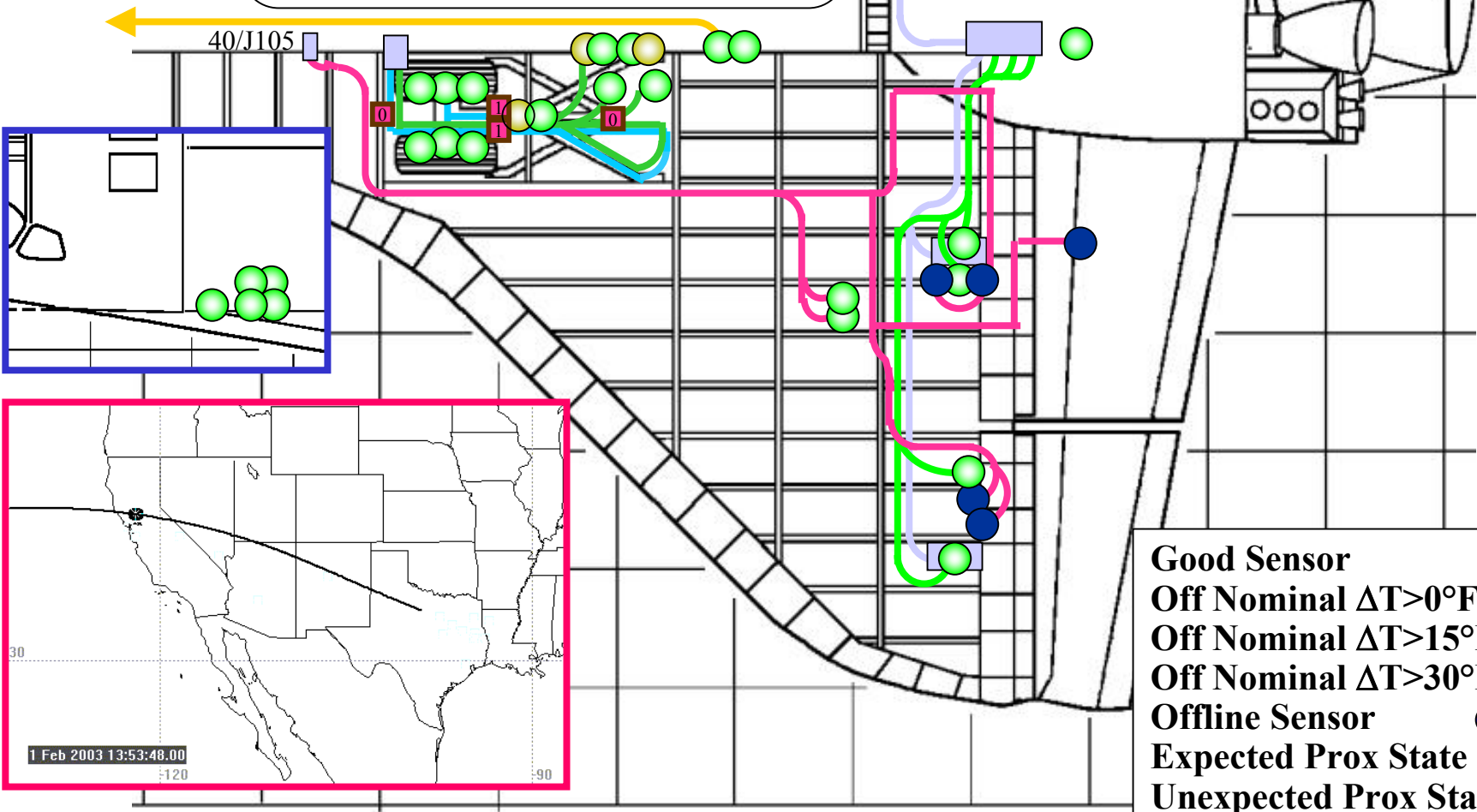
- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State
- Unexpected Prox State

18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963

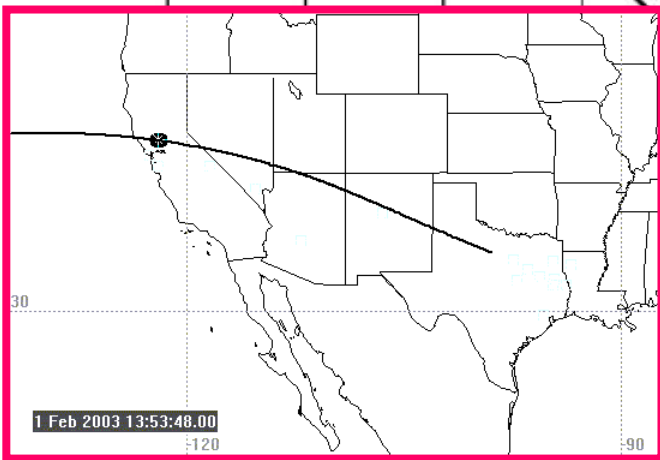


Debris #2 - 2nd report of debris observed leaving the Orbiter
(time is ± 2 sec)

13:53:48 (LOS -5:44)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



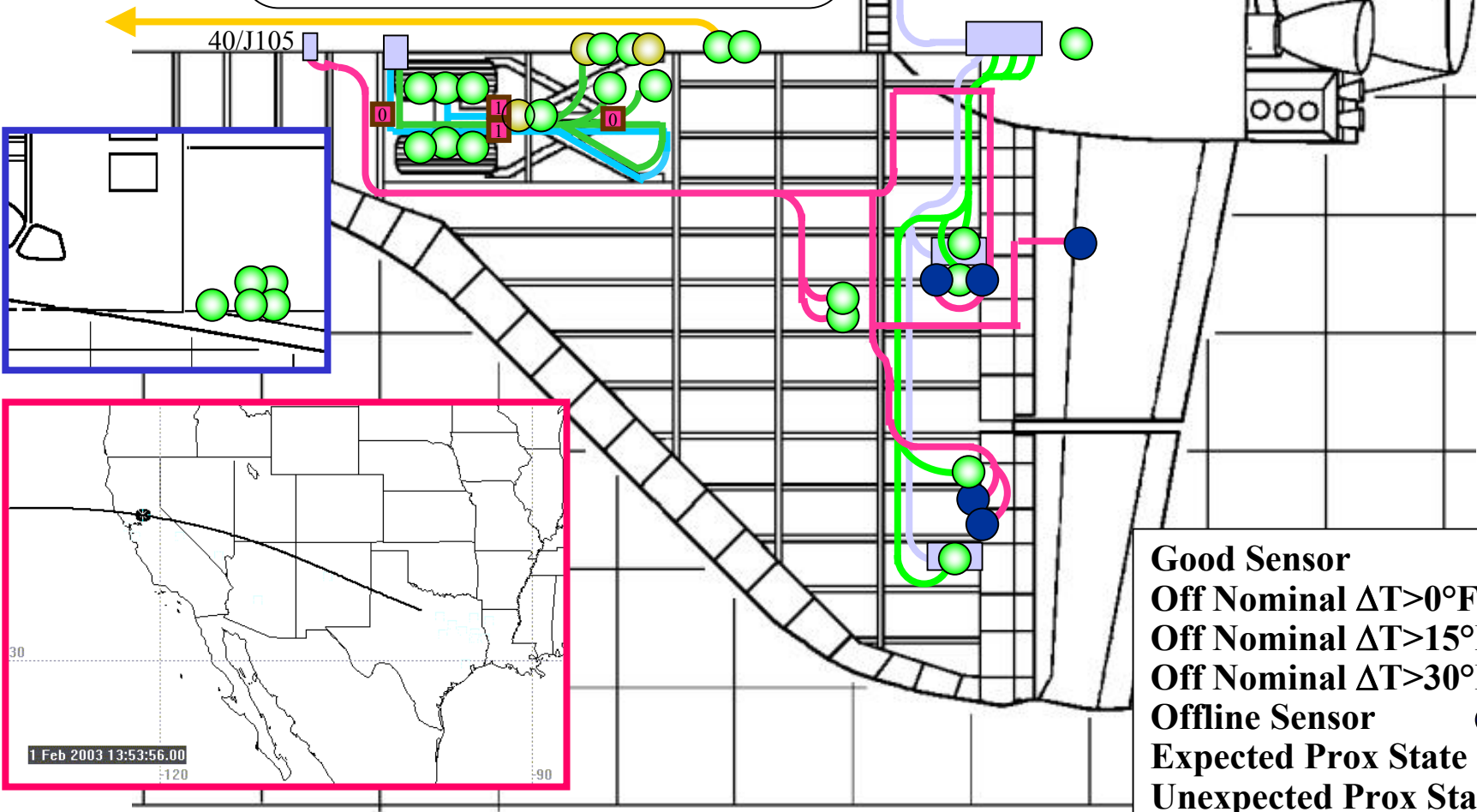
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Debris #3 - 3rd report of debris observed leaving the Orbiter (time is ± 2 sec)

13:53:56 (LOS -5:36)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



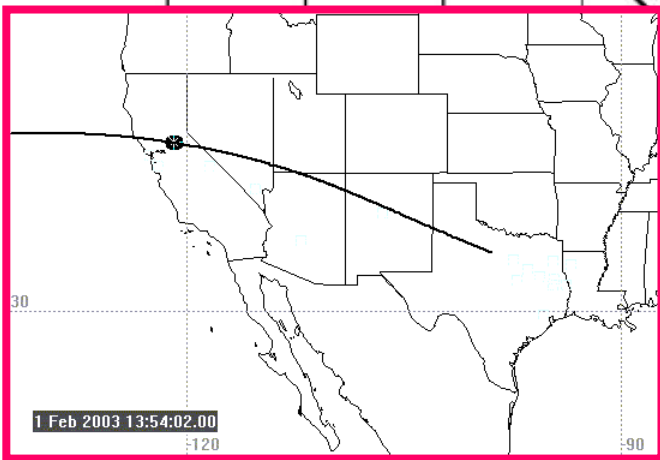
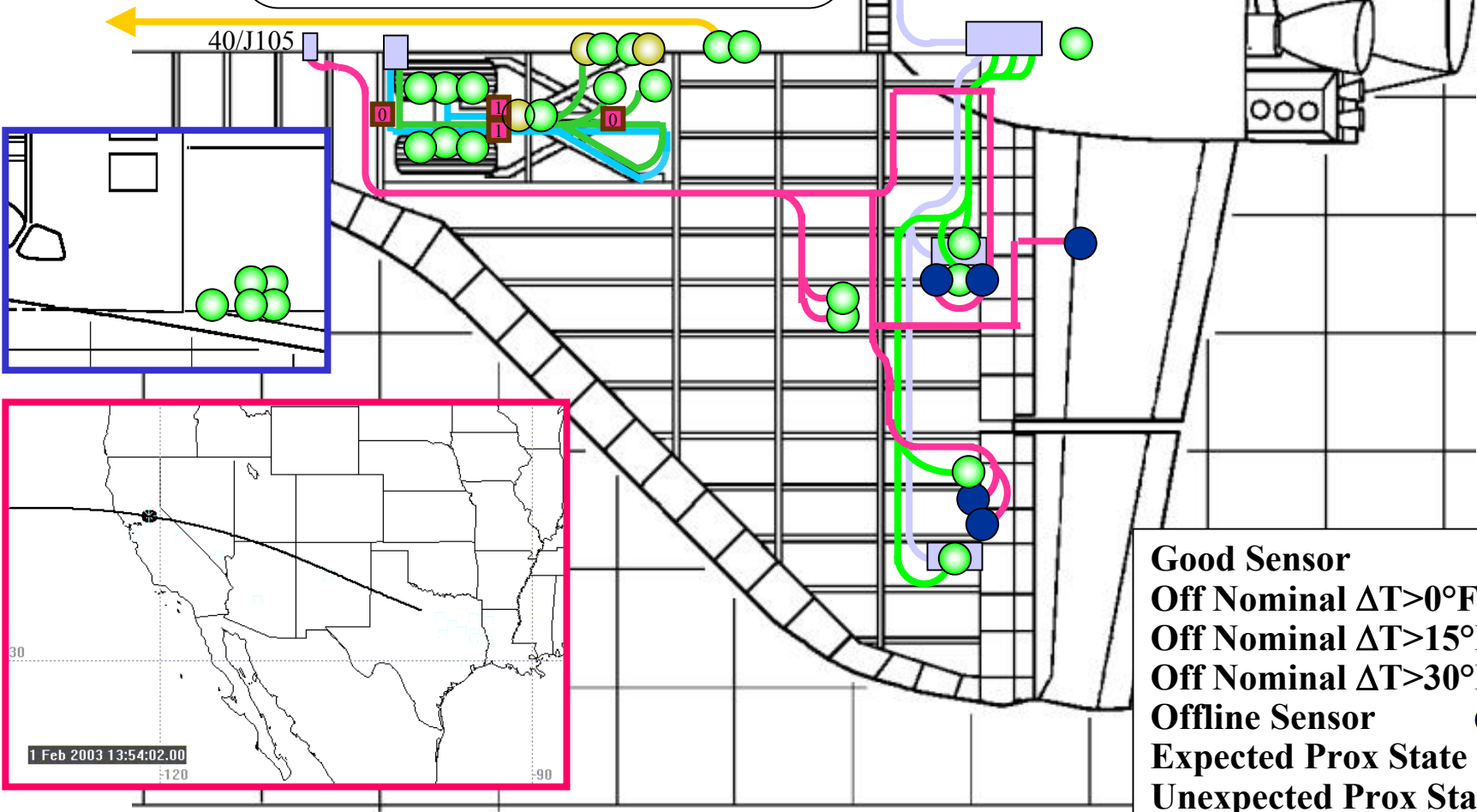
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Debris #4 - 4th report of debris observed leaving the Orbiter (time is ± 2 sec)

13:54:02 (LOS -5:30)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



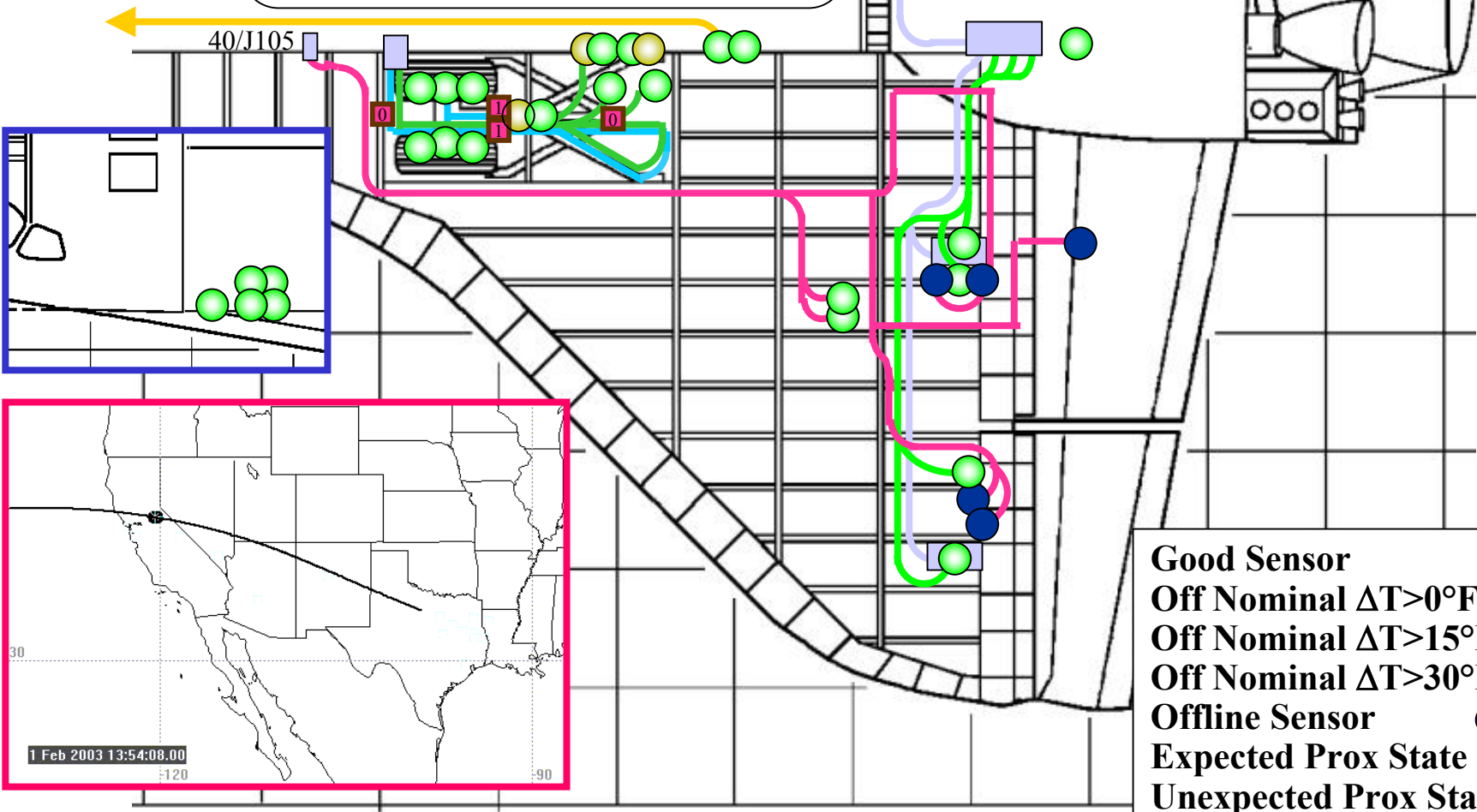
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Debris #5 - 5th report of debris observed leaving the Orbiter (time is ± 2 sec)

13:54:09 (LOS -5:23)



ASA 4

40/J105

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

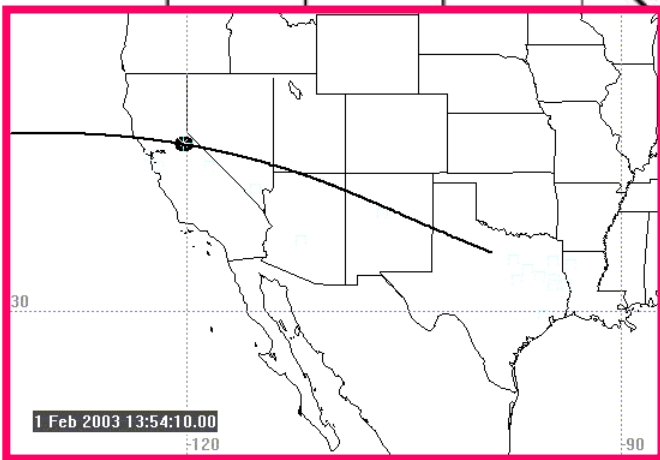
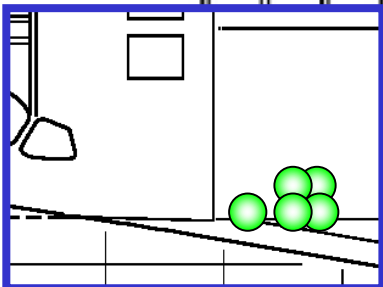
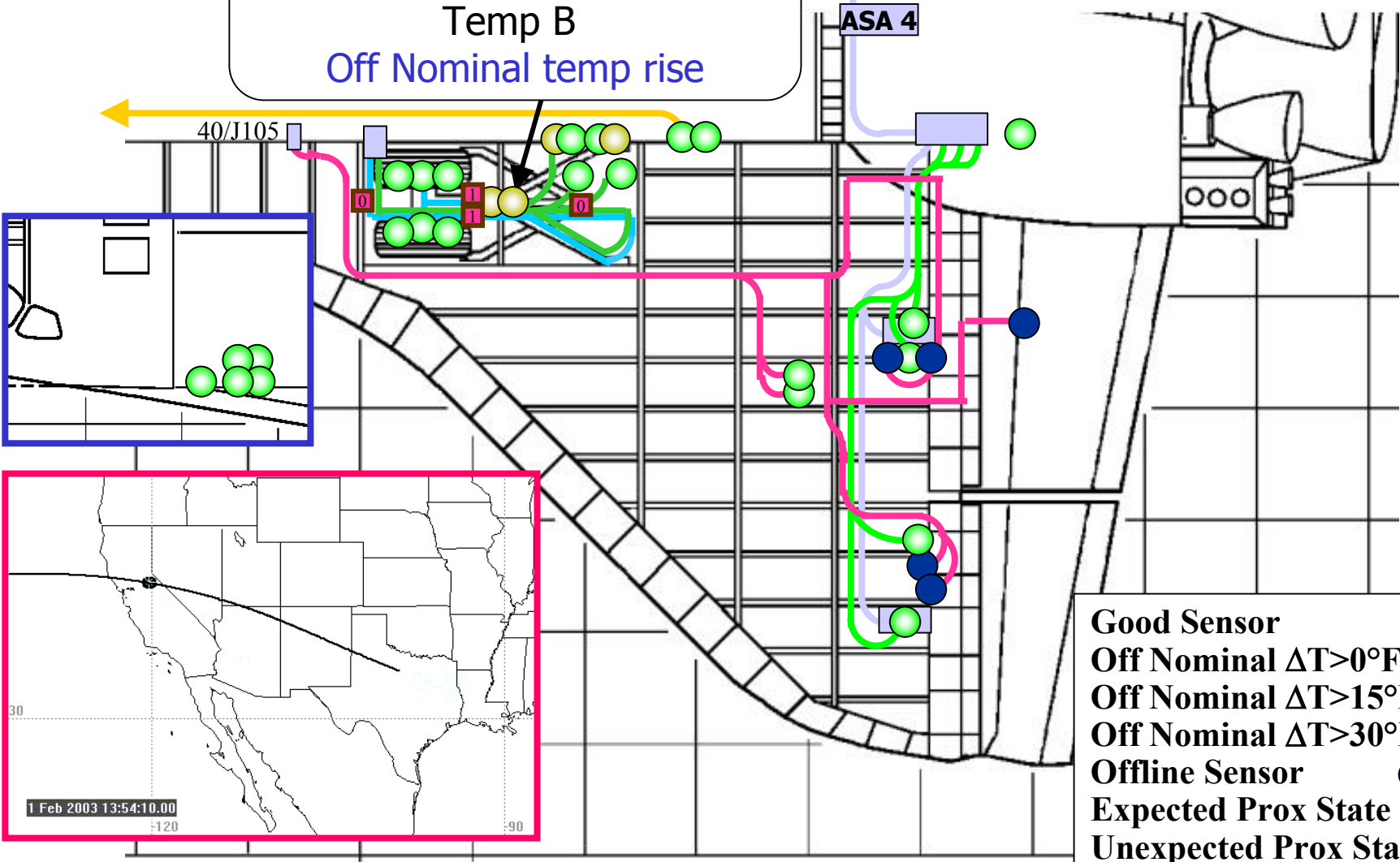
18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V58T1701A
 Left Main Gear Brake Line
 Temp B
 Off Nominal temp rise

13:54:10 (LOS -5:22)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

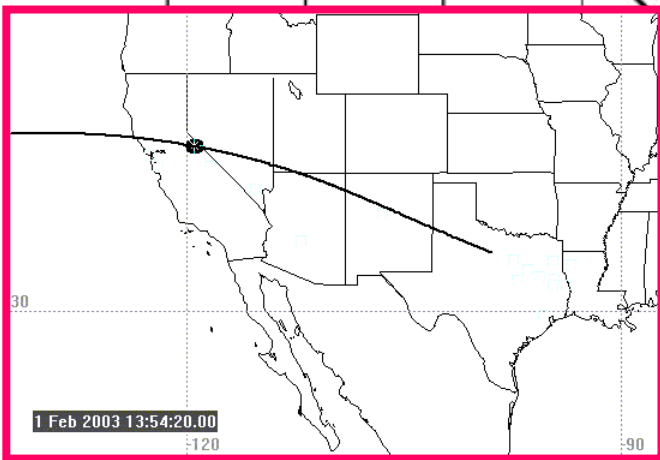
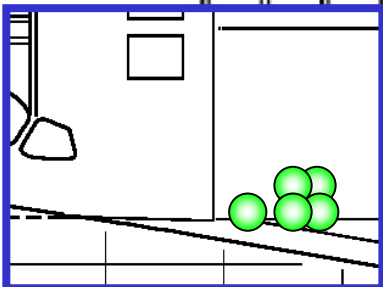
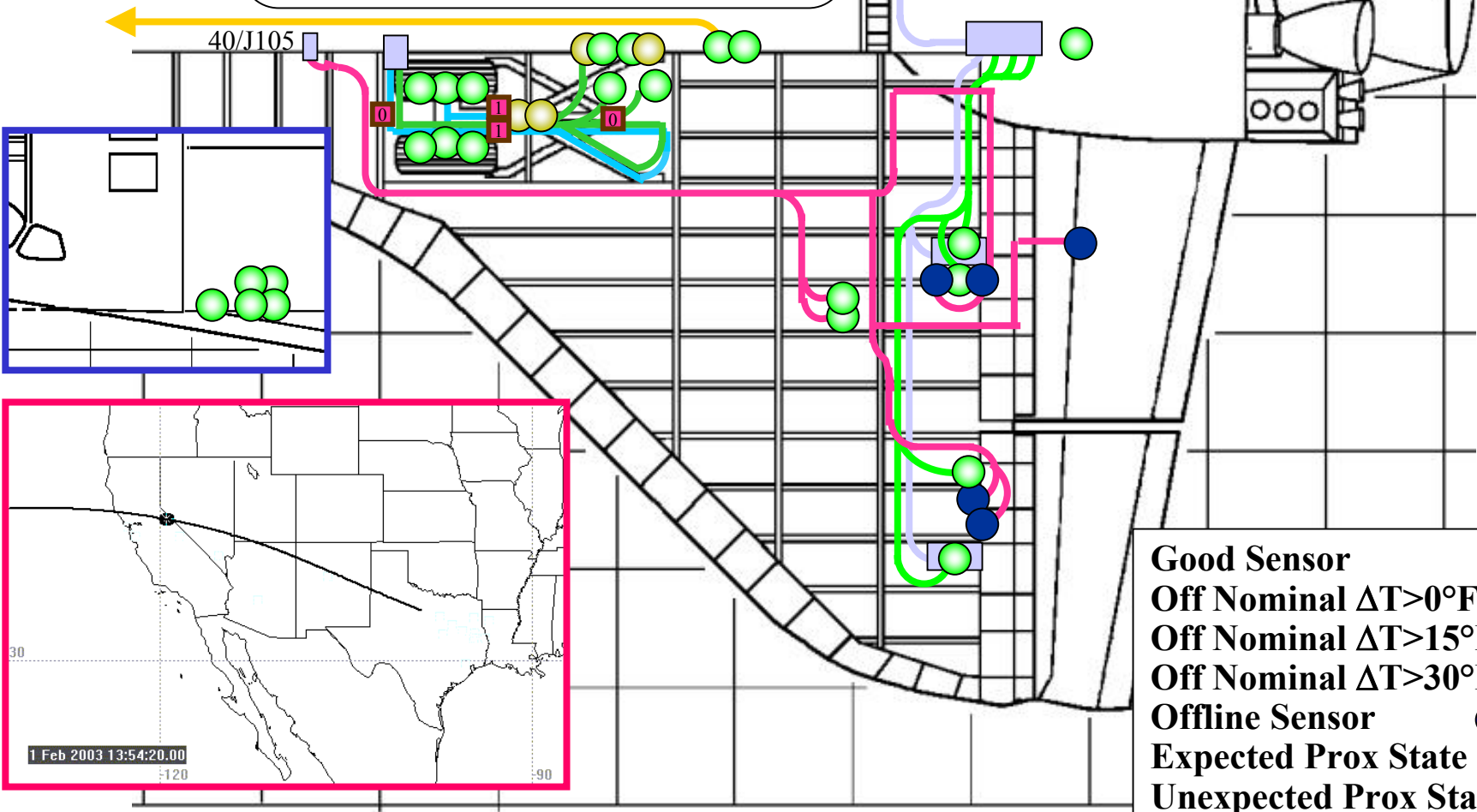
X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

Start of slow aileron trim change
 Reversal in growth trend of
 derived roll moment coefficient

13:54:20 (LOS -5:12)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

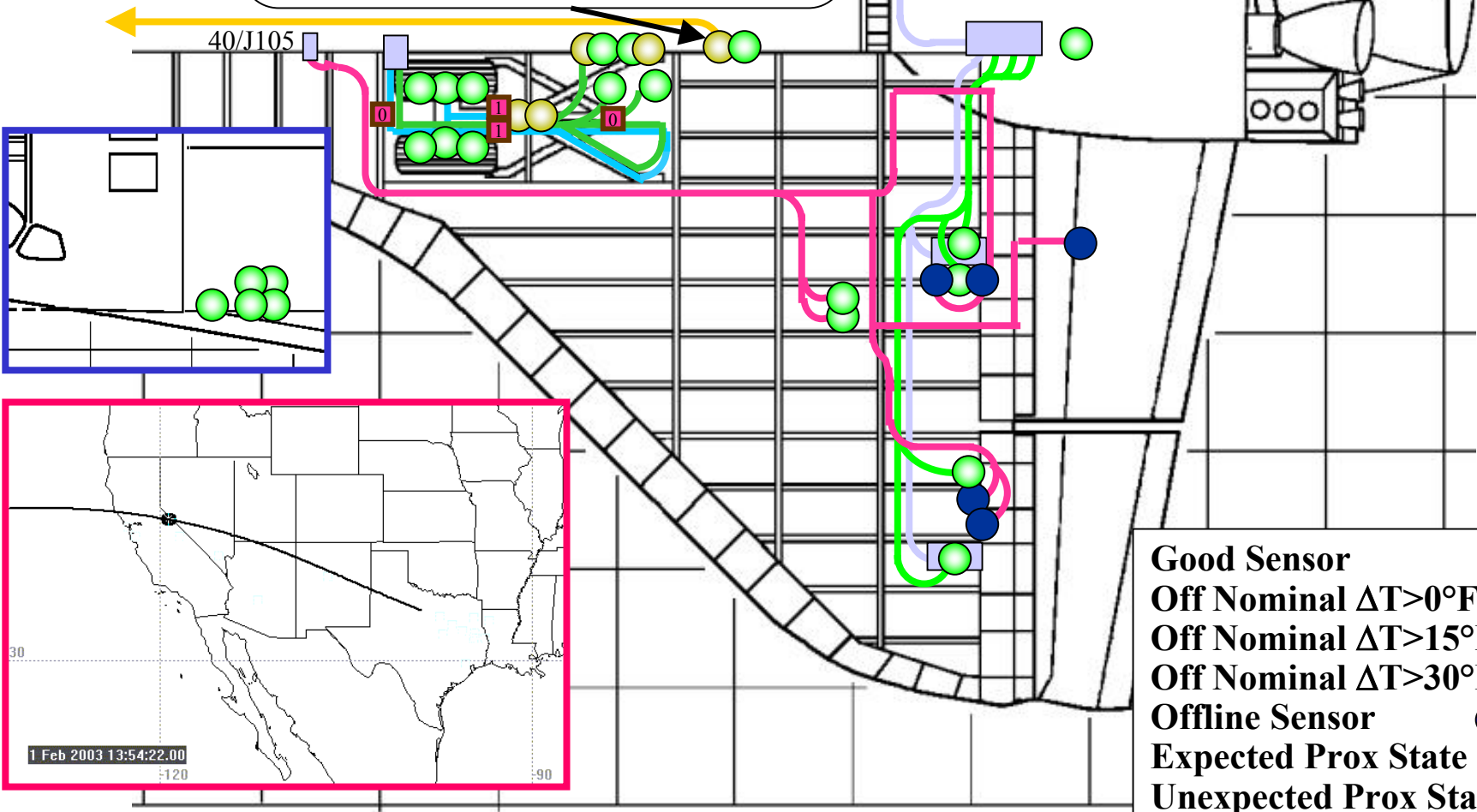
X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



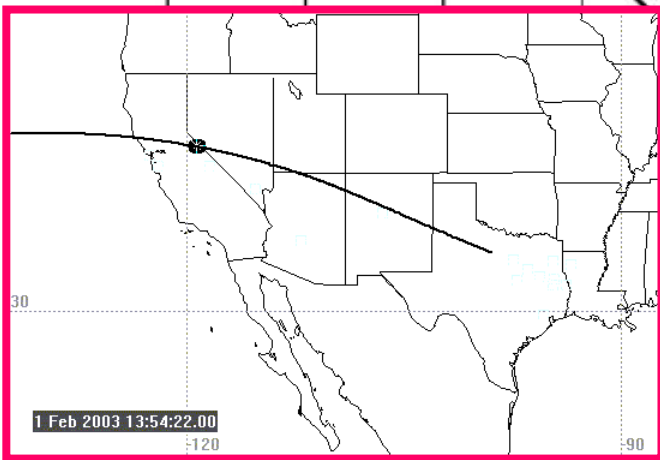
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V34T1106A
 Mid Fuselage Left Body Line
 Temp at x1215
 Off Nominal temp rise

13:54:22 (LOS -5:10)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



1 Feb 2003 13:54:22.00

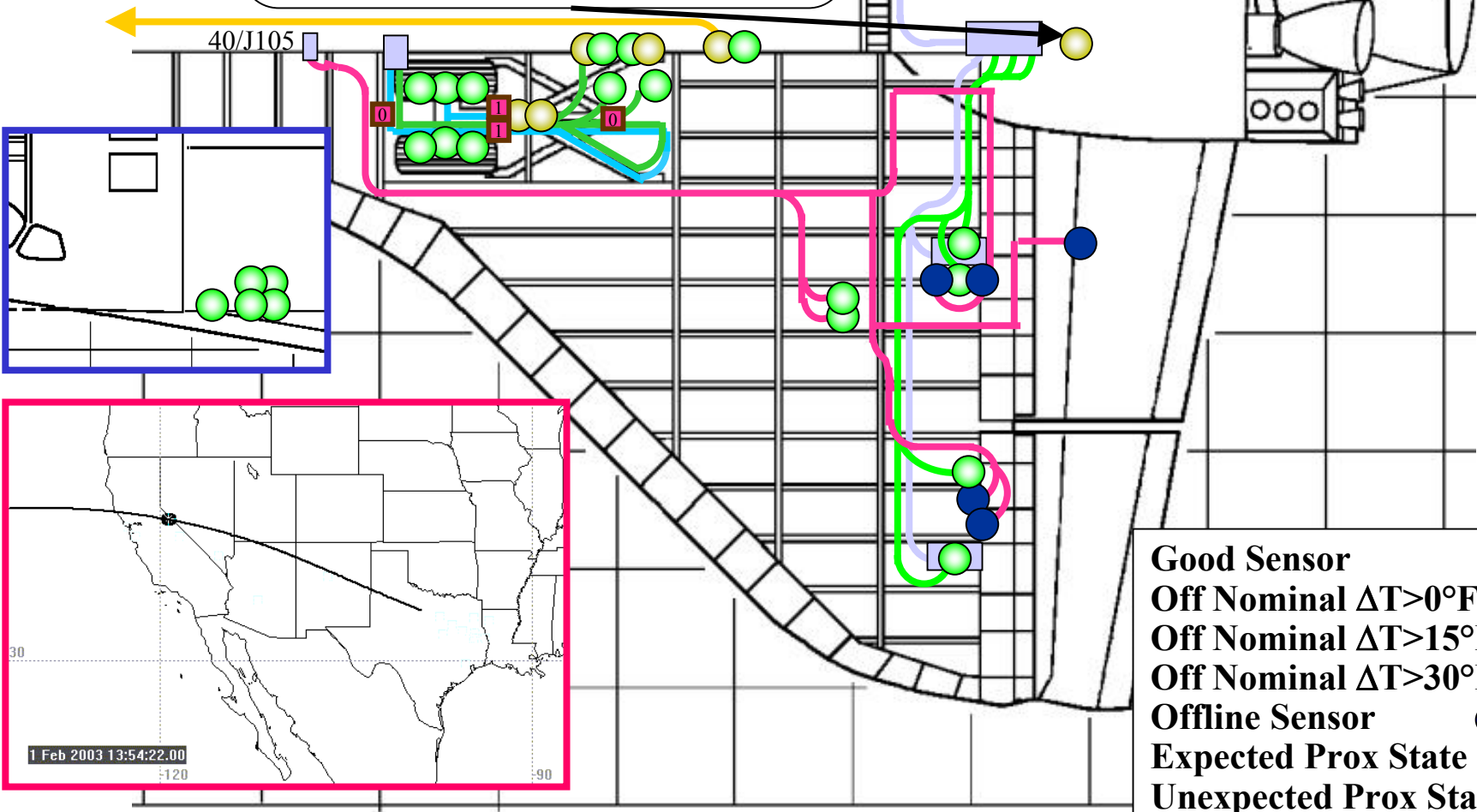
X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



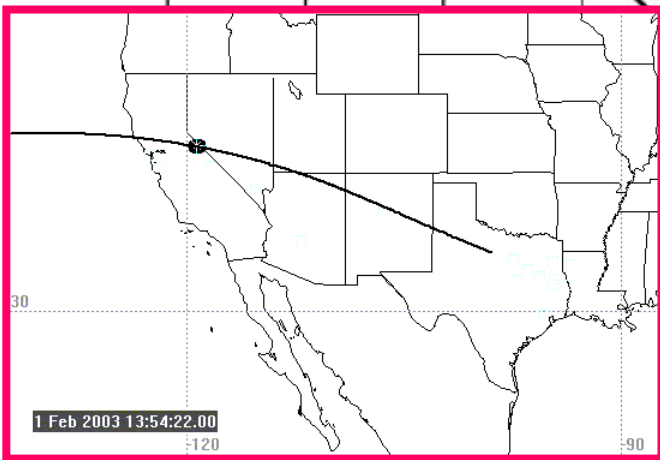
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V09T1724A
 LH Aft Fuselage Sidewall
 Temp at x1410
 Off Nominal temp rise

13:54:22 (LOS -5:10)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



x₀ 18.493 x₀ 1036.587 x₀ 1184.881 x₀ 1292.775 x₀ 1420.869 x₀ 1548.963



GMT 13:52:00

LOS 13:59:32

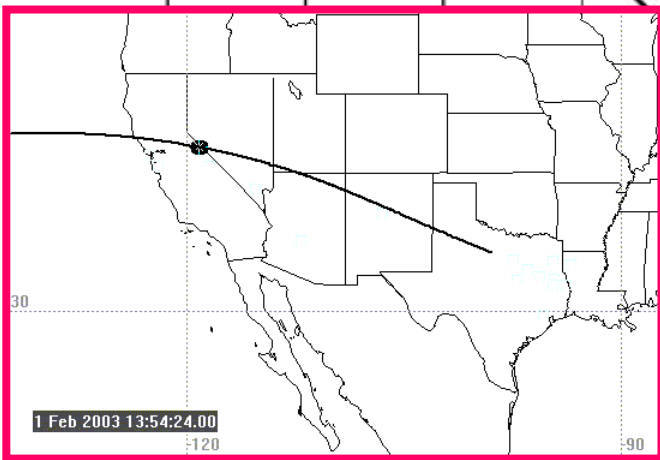
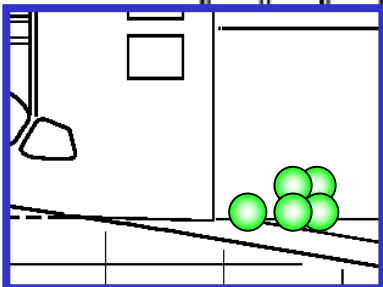
GMT 14:00:00

V58T0405A
Left Main Gear Strut
Actuator Temp
Off Nominal temp rise

13:54:24 (LOS -5:08)

ASA 4

40/J105



1 Feb 2003 13:54:24.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



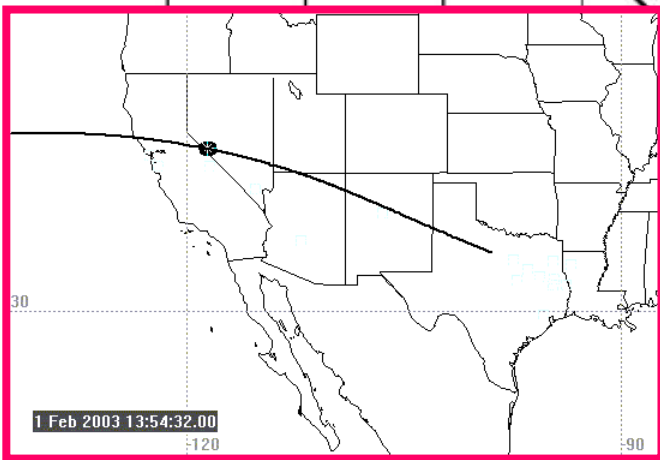
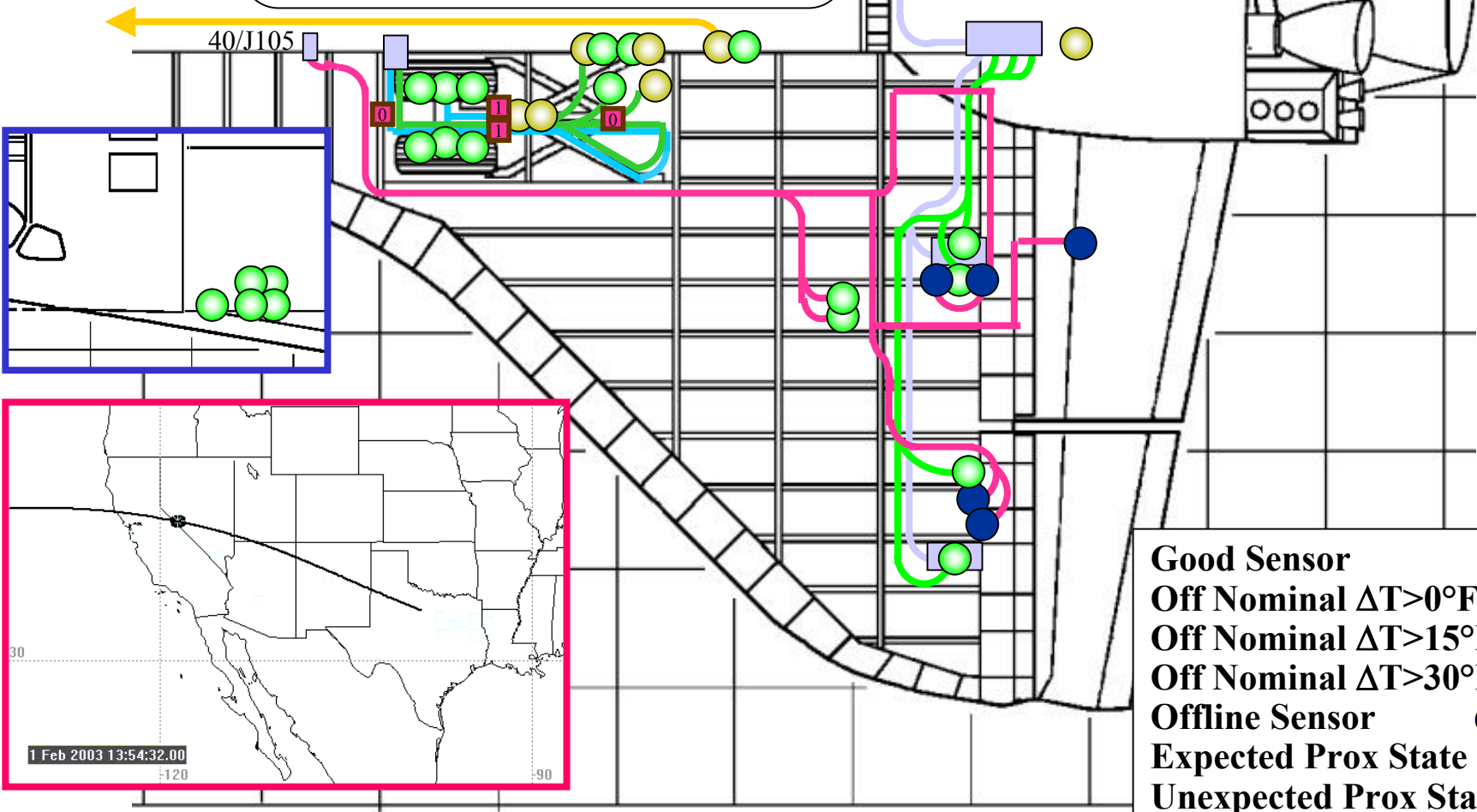
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Flash #1 - Orbiter envelope suddenly brightened (duration 0.3 sec)

13:54:33 (LOS -4:59)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



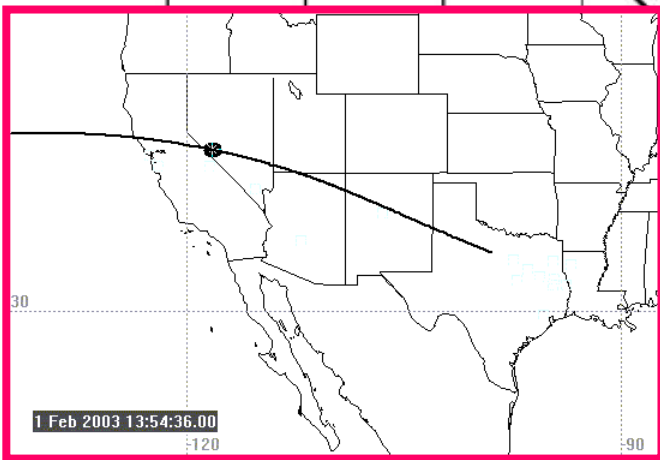
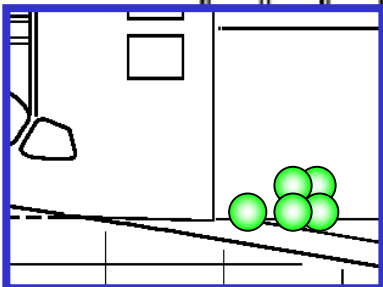
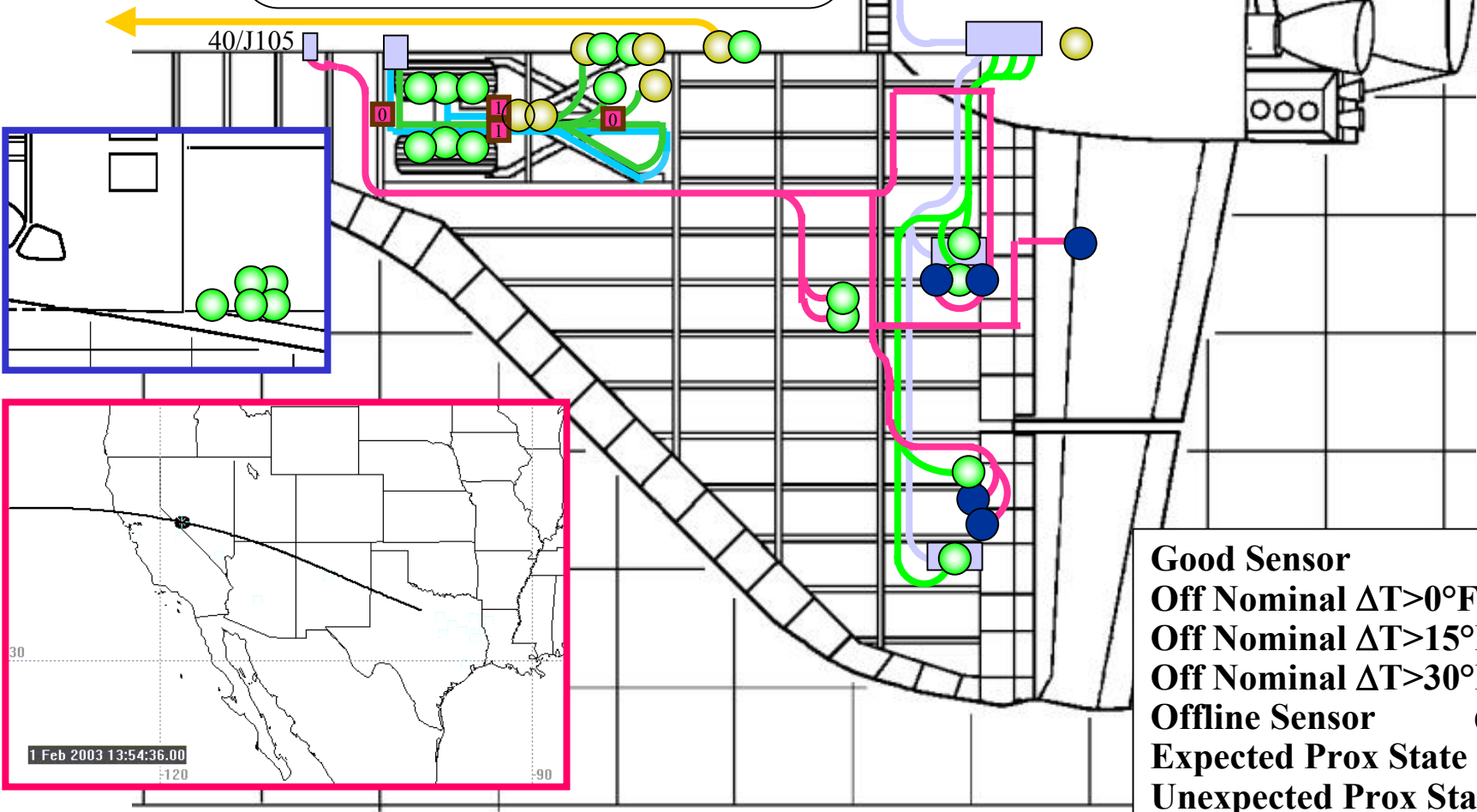
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Debris #6 - 6th report of debris observed leaving the Orbiter (Debris events 6 and 14 are visually the Biggest. Time is ± 1 sec)

13:54:36 (LOS -4:56)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

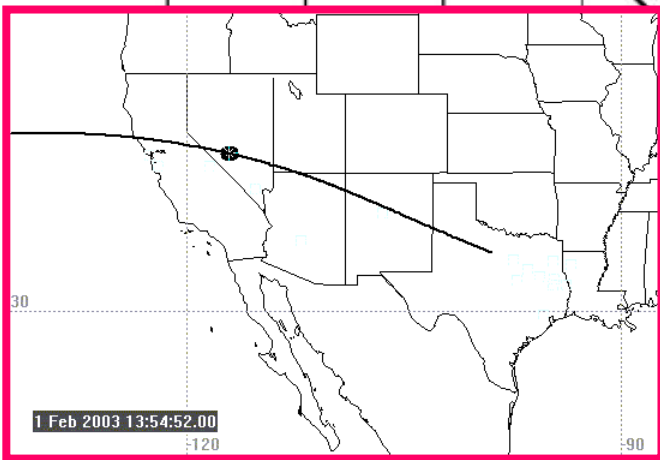
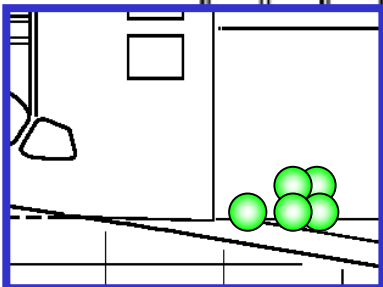
GMT 14:00:00

V51T0574A
 MLG LH Outboard Wheel
 Temp
 Off Nominal temp rise (2 bits)

13:54:53 (LOS -4:39)

ASA 4

40/J105



1 Feb 2003 13:54:52.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 8.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



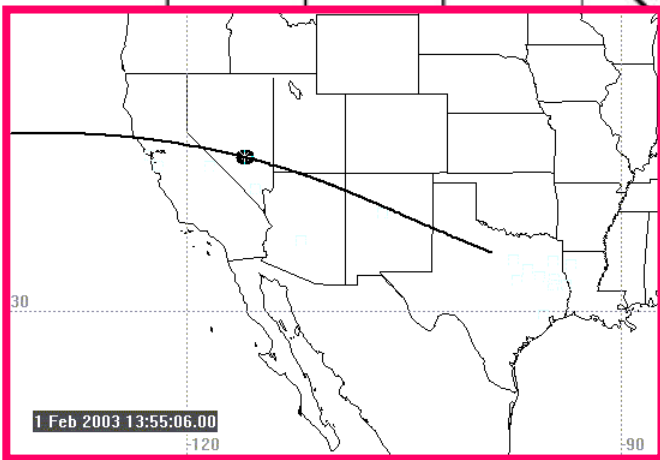
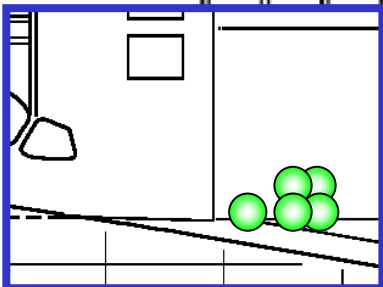
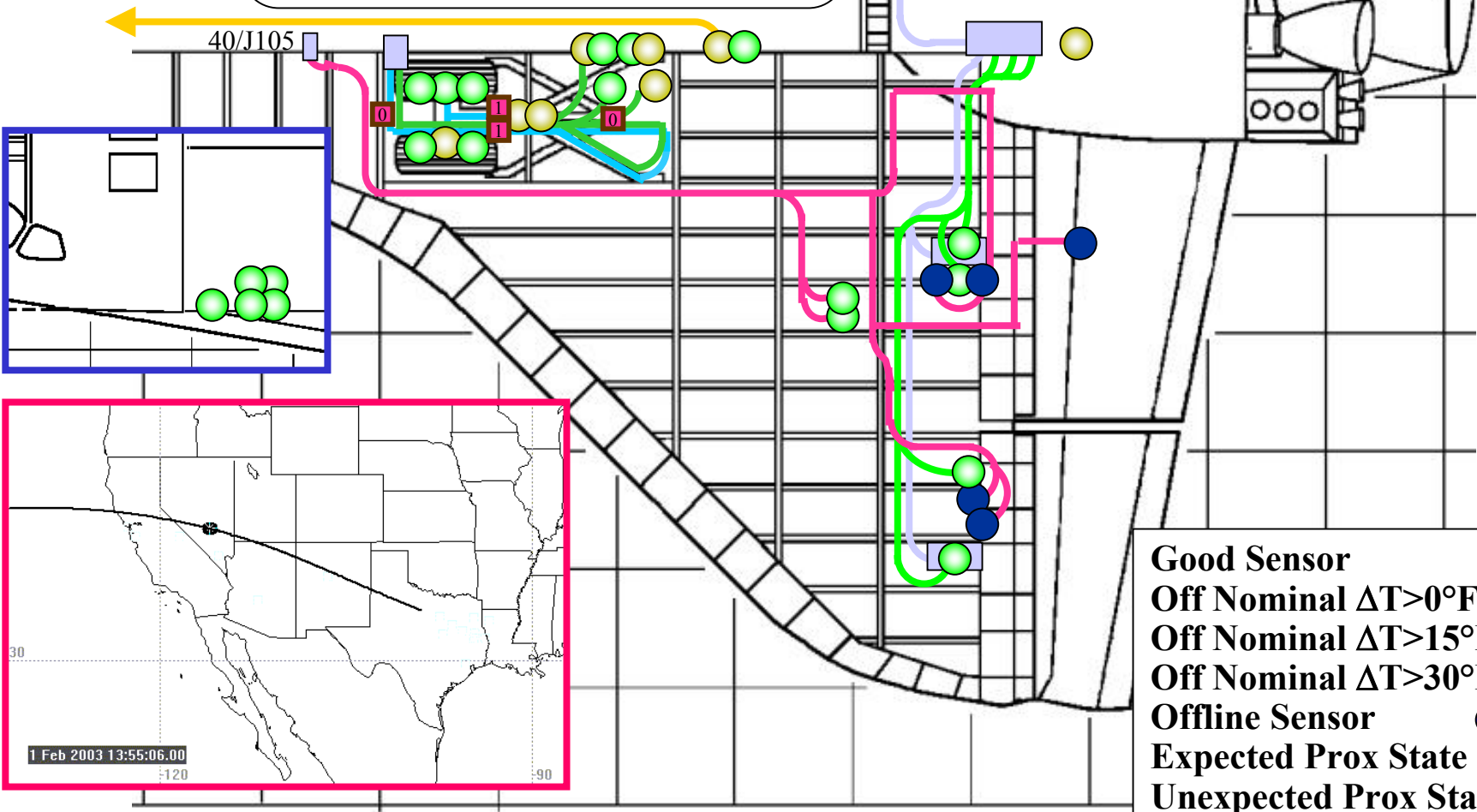
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Debris #7 - 7th report of debris observed leaving the Orbiter (time is ± 3 sec)

13:55:07 (LOS -4:25)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



GMT 13:52:00

LOS 13:59:32

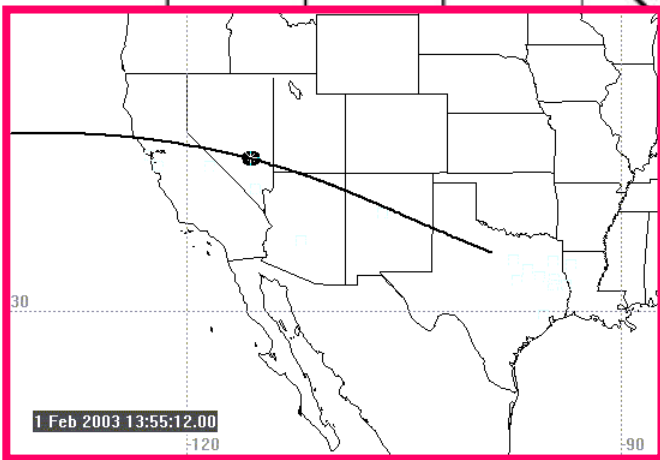
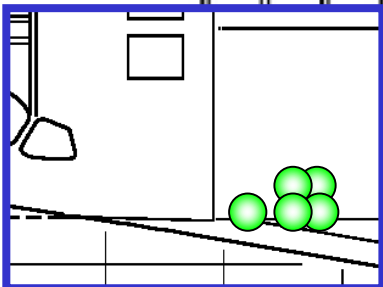
GMT 14:00:00

V58T0842A
System 3 LH Forward Brake
Switch Valve Return Line Temp
Off Nominal temp rise

13:55:12 (LOS -4:20)

ASA 4

40/J105



1 Feb 2003 13:55:12.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



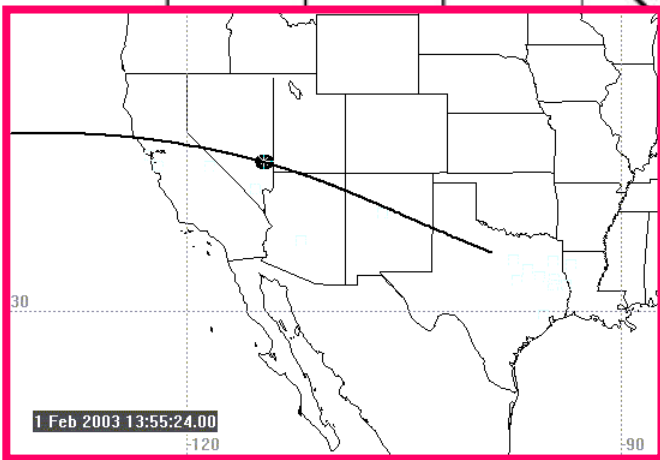
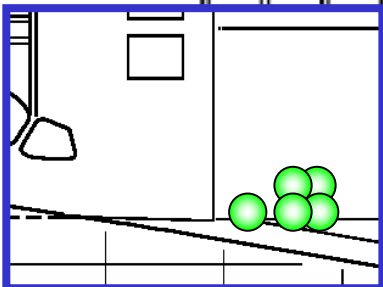
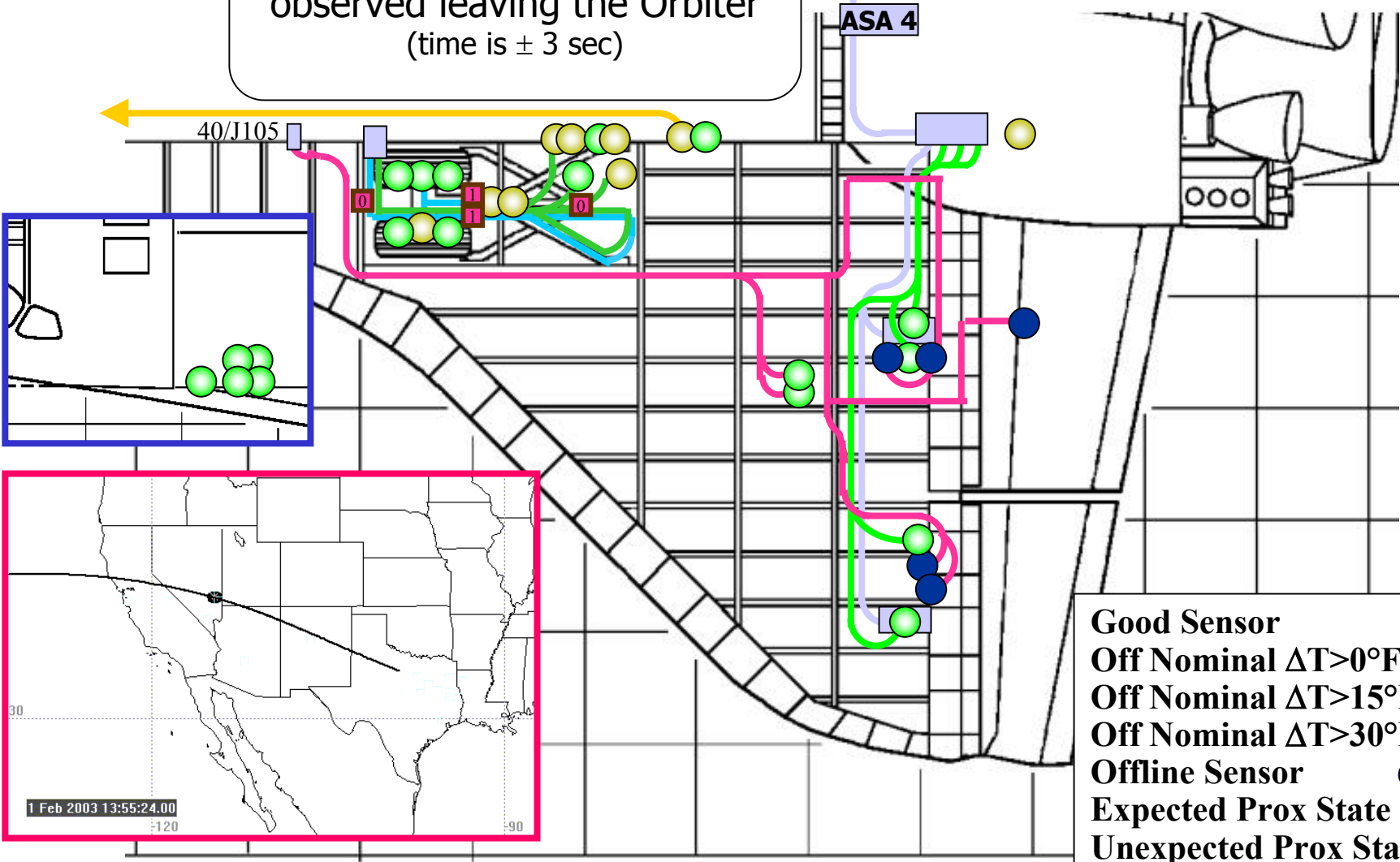
LOS 13:59:32

GMT 13:52:00

GMT 14:00:00

Debris #8 - 8th report of debris observed leaving the Orbiter
(time is ± 3 sec)

13:55:24 (LOS -4:08)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



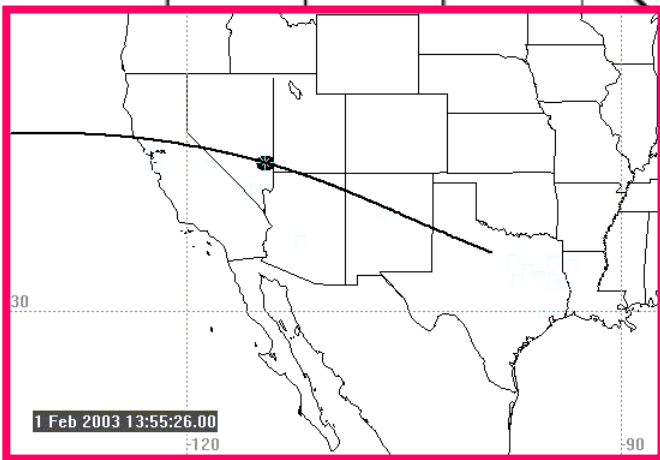
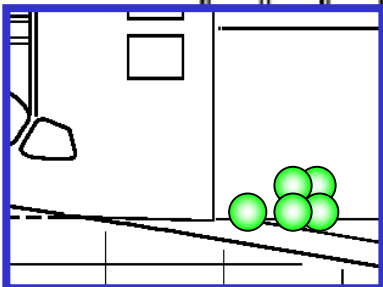
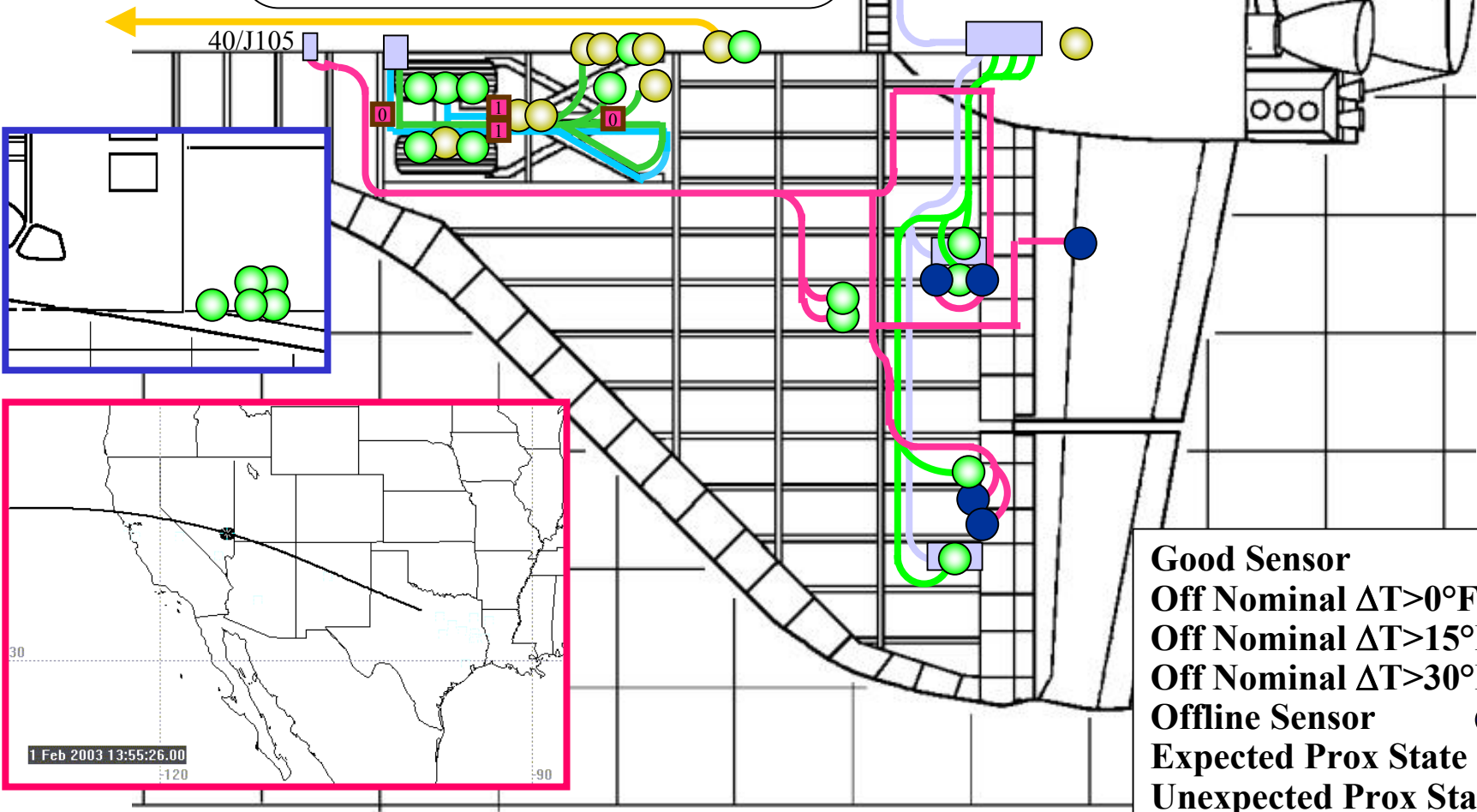
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Debris #9 - 9th report of debris observed leaving the Orbiter (time is ± 2 sec)

13:55:27 (LOS -4:05)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493 X₀1036.587 X₀1184.881 X₀1292.775 X₀1420.869 X₀1548.963



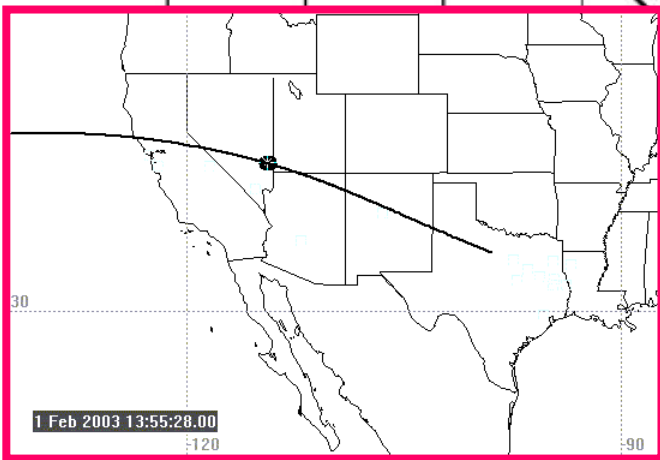
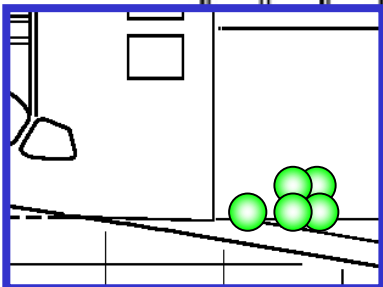
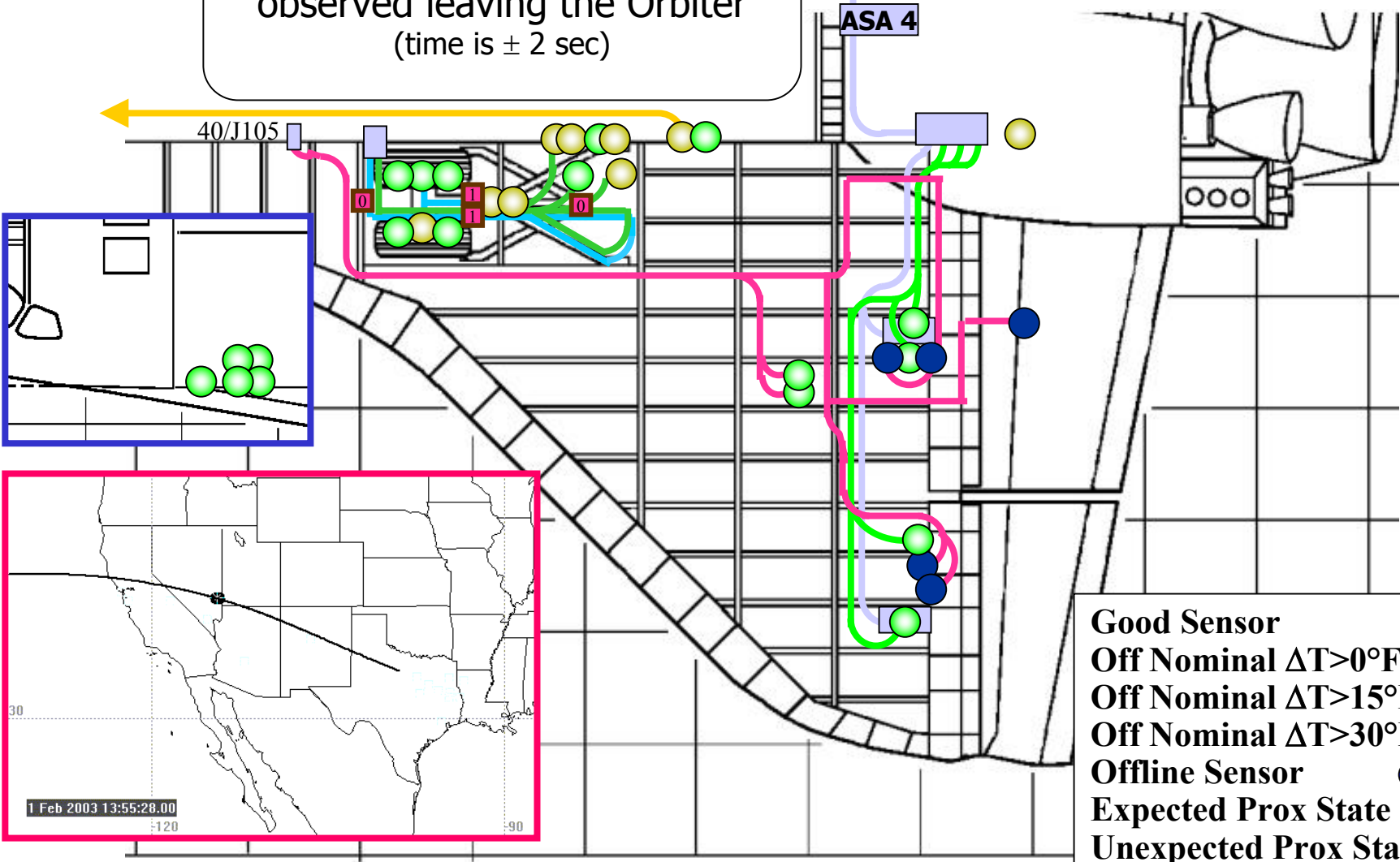
LOS 13:59:32

GMT 13:52:00

GMT 14:00:00

Debris #10 - 10th report of debris observed leaving the Orbiter (time is ± 2 sec)

13:55:28 (LOS -4:04)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



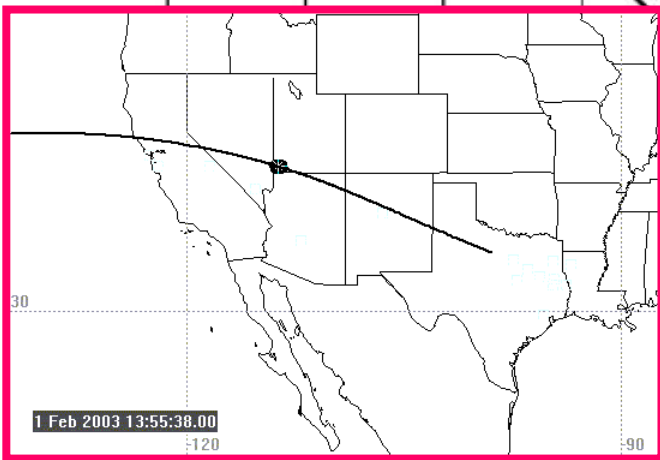
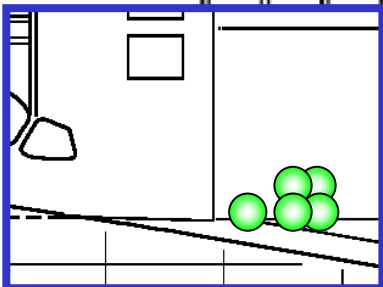
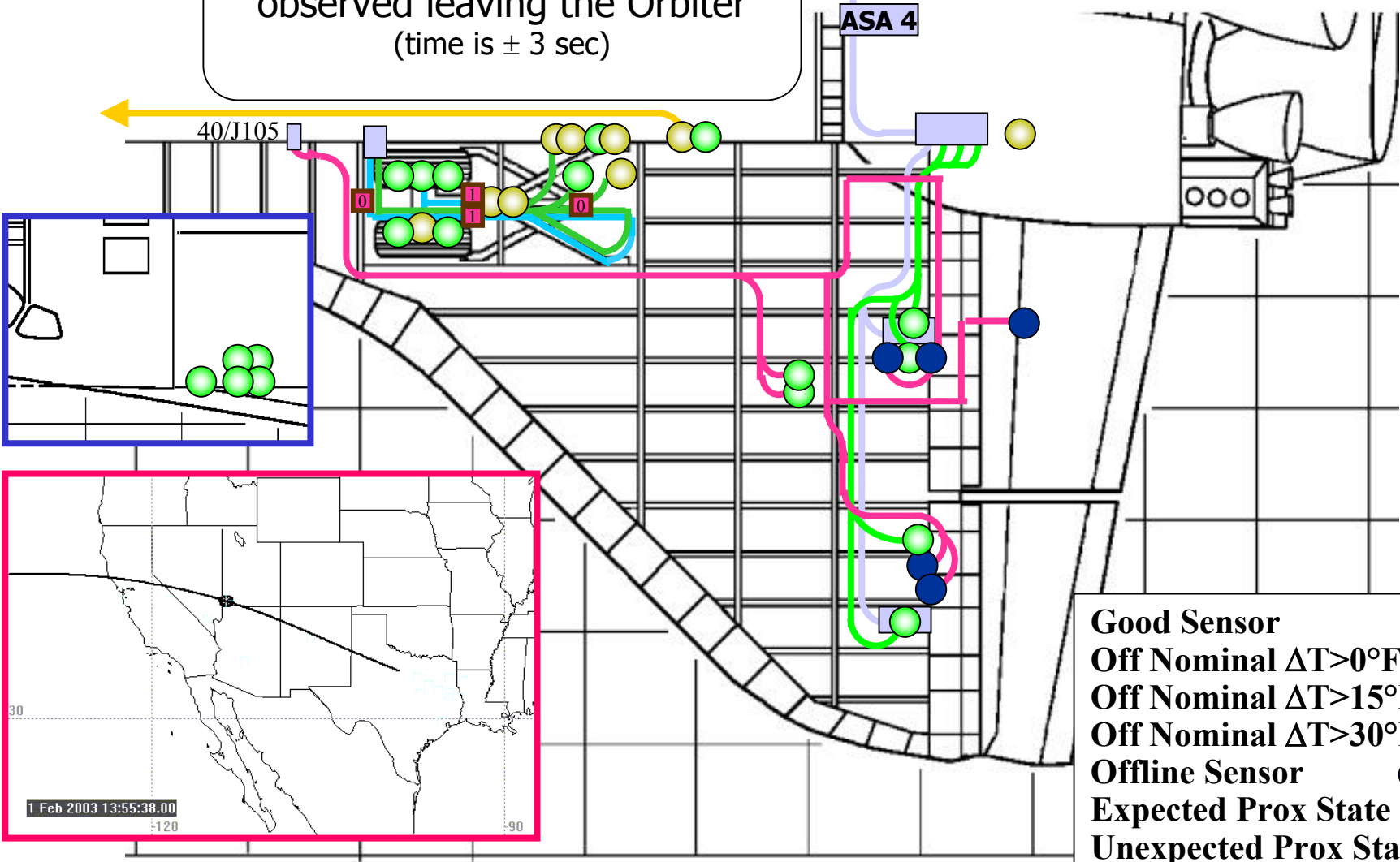
LOS 13:59:32

GMT 13:52:00

GMT 14:00:00

Debris #11 - 11th report of debris observed leaving the Orbiter (time is ± 3 sec)

13:55:39 (LOS -3:53)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ F$ ●
- Off Nominal $\Delta T > 15^\circ F$ ●
- Off Nominal $\Delta T > 30^\circ F$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



GMT 13:52:00

LOS 13:59:32

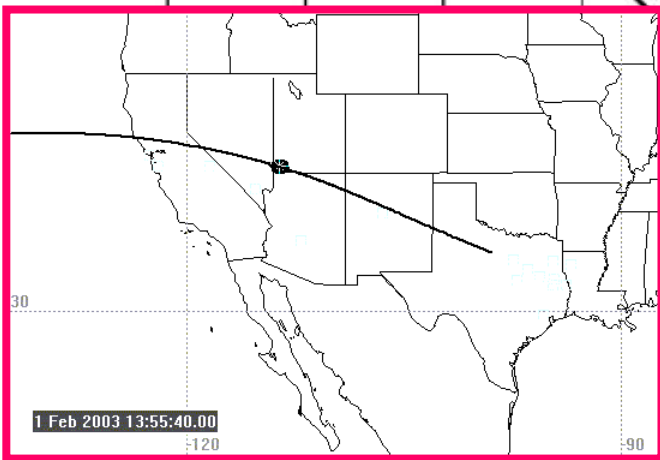
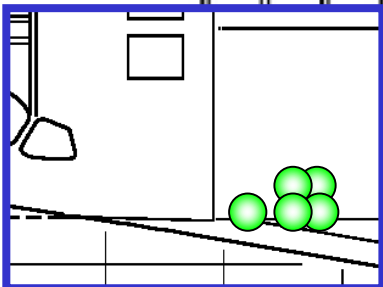
GMT 14:00:00

V34T1118A
Mid Fuselage Port (Left) Sill
Longeron Temp at x1215
Off Nominal temp rise

13:55:41 (LOS -3:51)

ASA 4

40/J105



1 Feb 2003 13:55:40.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 8.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

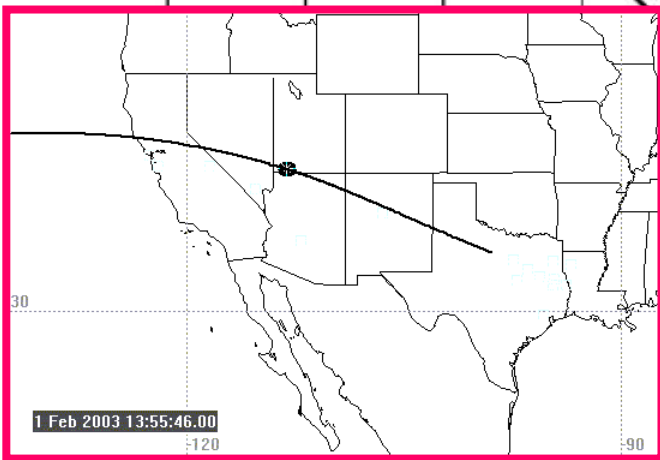
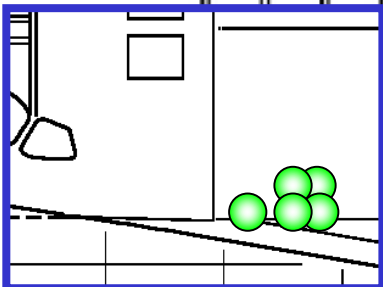
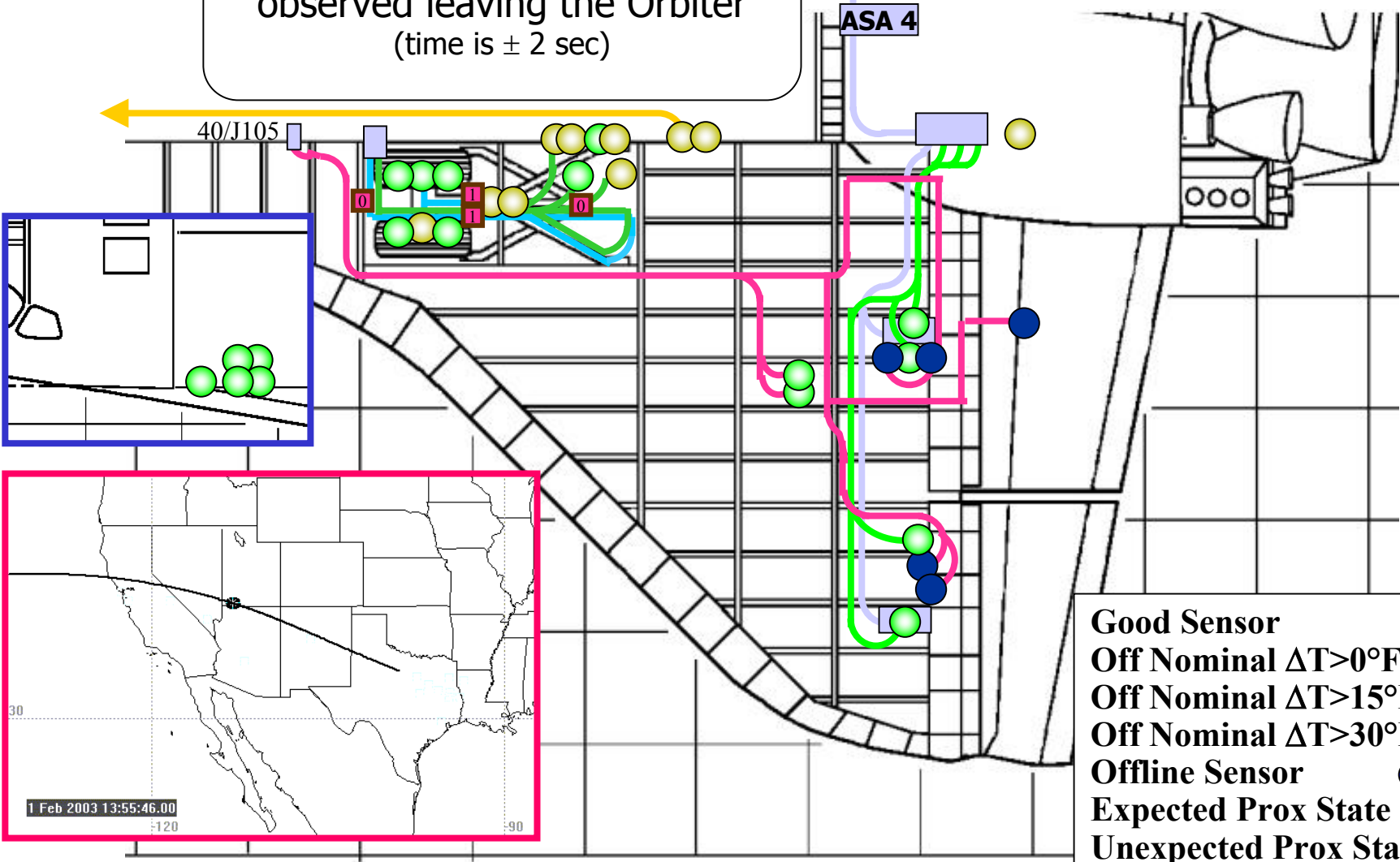
X₀ 1548.963



GMT 13:52:00 LOS 13:59:32
GMT 14:00:00

Debris #12 - 12th report of debris observed leaving the Orbiter
(time is ± 2 sec)

13:55:47 (LOS -3:45)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



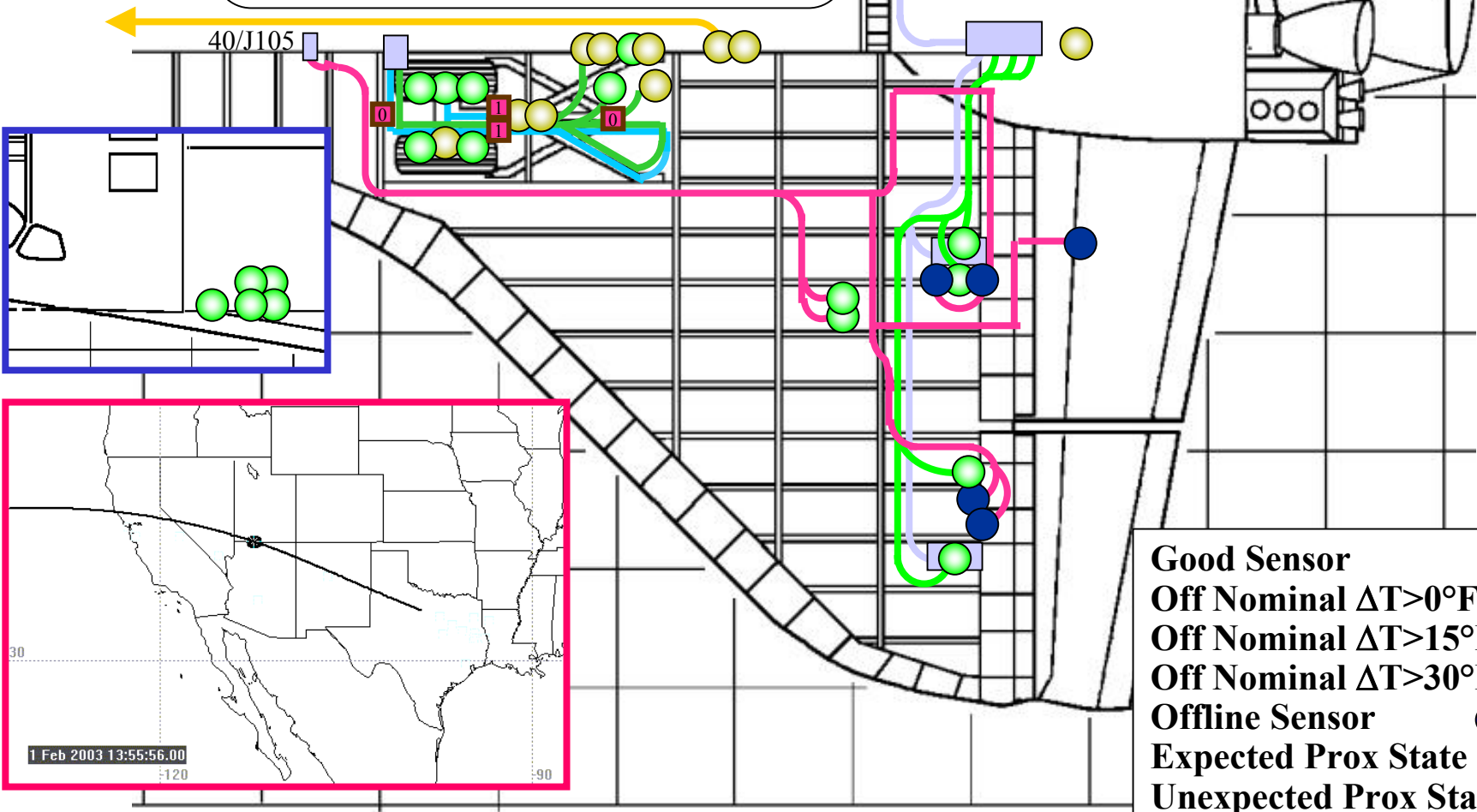
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Debris #13 - 13th report of debris observed leaving the Orbiter (time is ± 2 sec)

13:55:57 (LOS -3:35)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



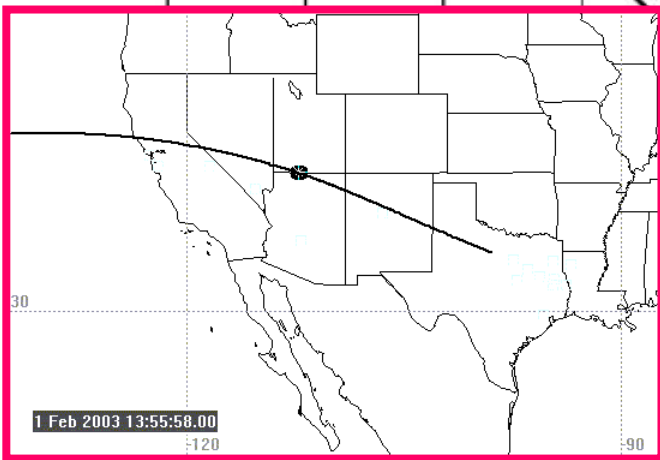
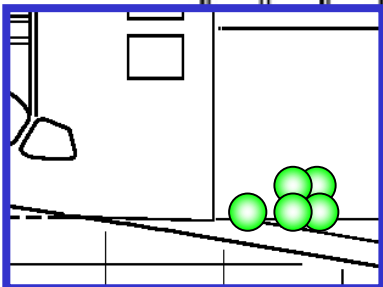
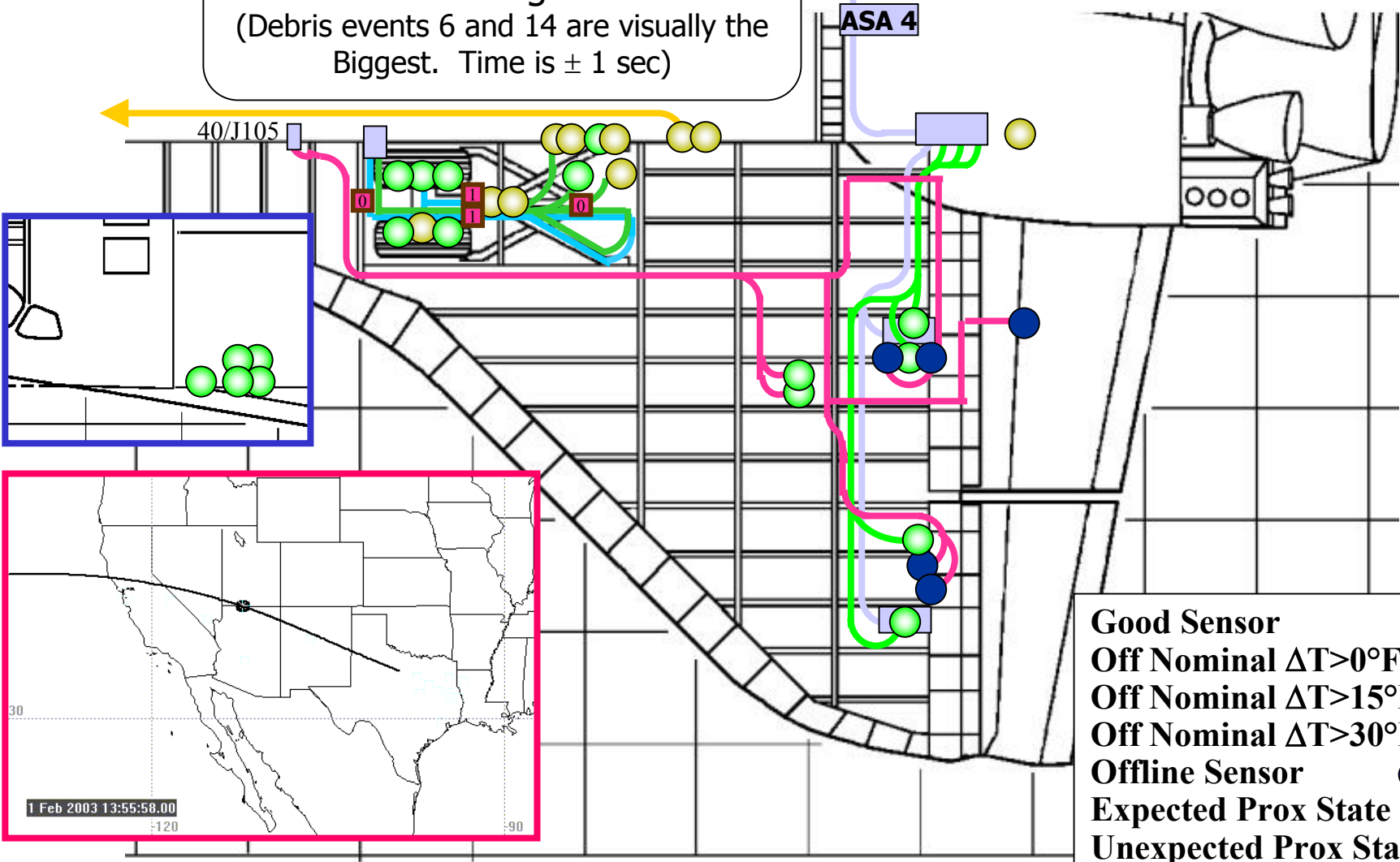
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Debris #14 - 14th report of debris observed leaving the Orbiter (Debris events 6 and 14 are visually the Biggest. Time is ± 1 sec)

13:55:59 (LOS -3:33)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

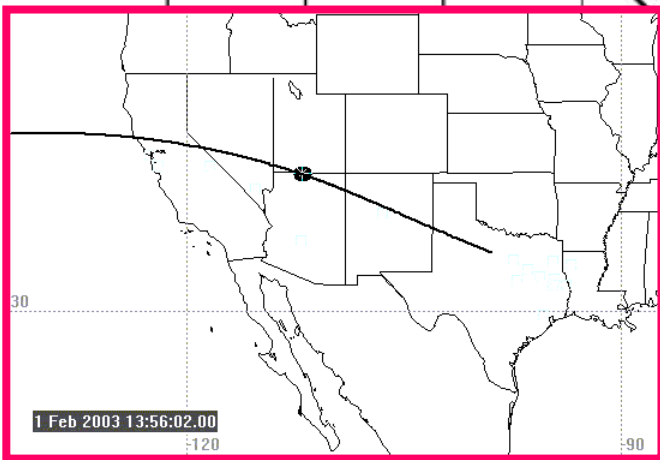
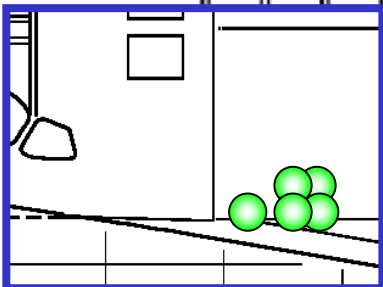
GMT 14:00:00

V09T1002A
Left Lower Wing Skin Temp
Shows wire damage trend

13:56:03 (LOS -3:29)

ASA 4

40/J105



1 Feb 2003 13:56:02.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 8.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

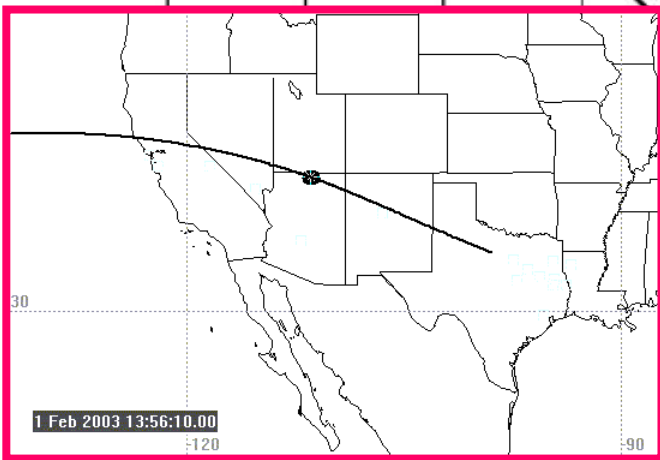
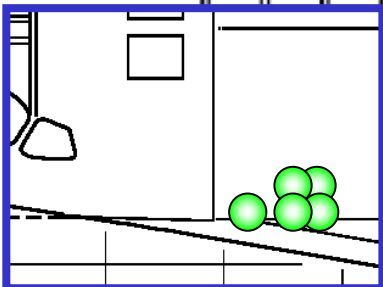
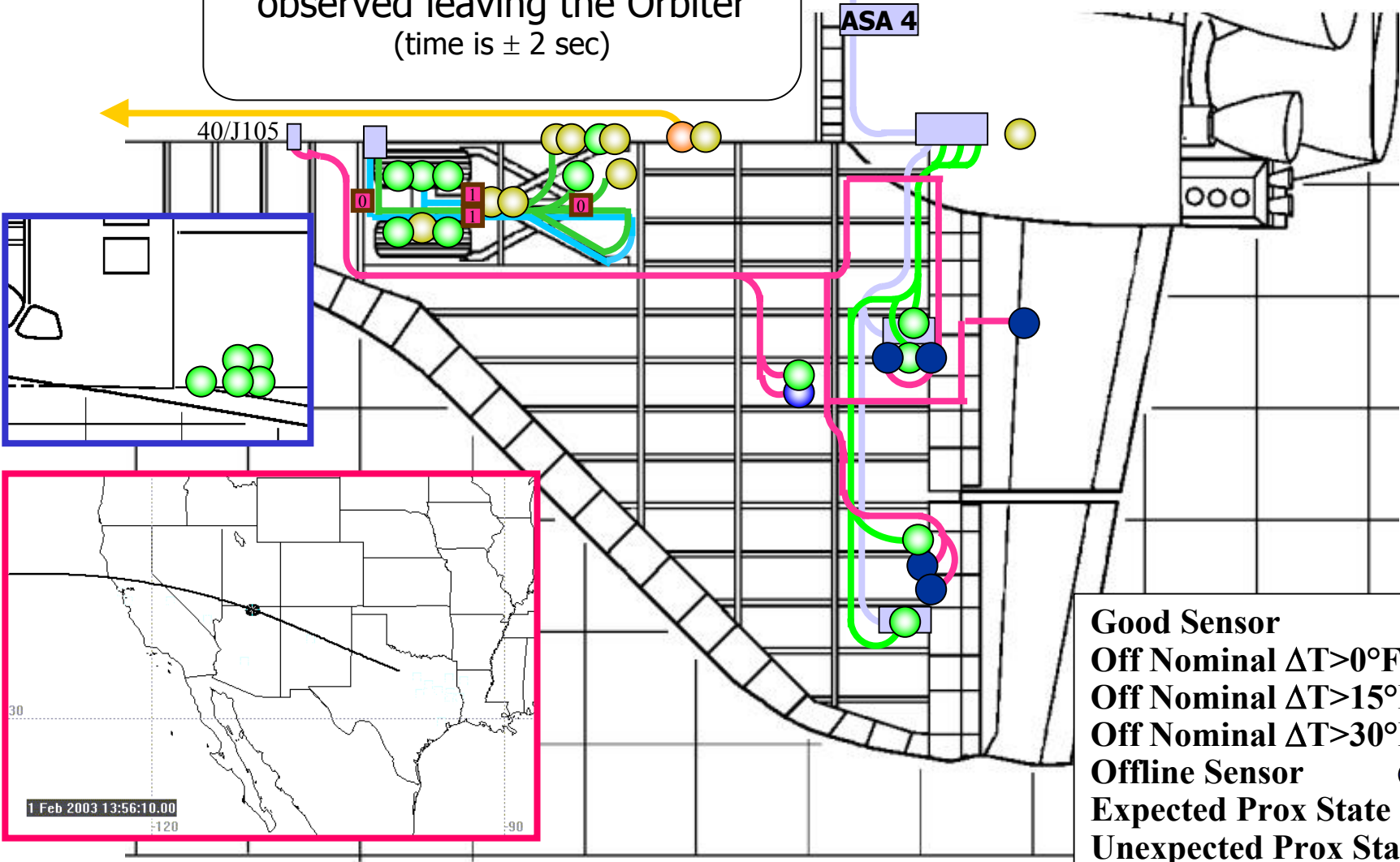
X₀ 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

Debris #15 - 15th report of debris
 observed leaving the Orbiter
 (time is ± 2 sec)

13:56:11 (LOS -3:21)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



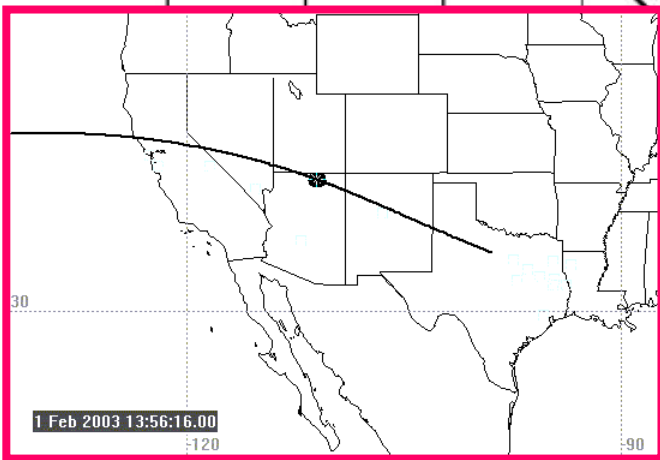
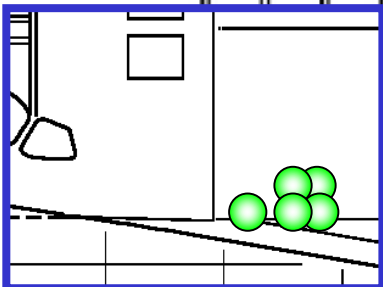
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V58T0125A
 LMG Uplock Actuator Unlock
 Line Temp
 Off Nominal temp rise

13:56:16 (LOS -3:16)

ASA 4

40/J105



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

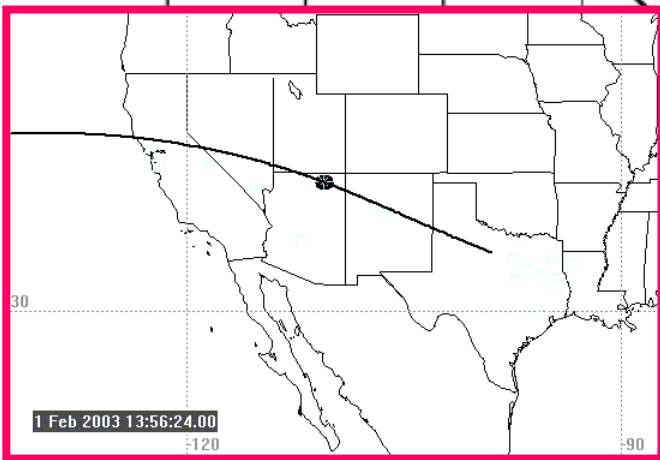
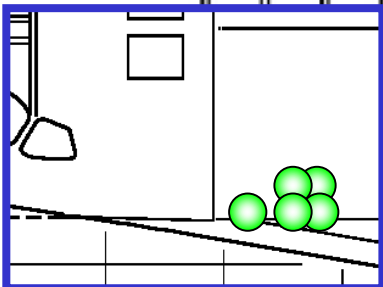
GMT 14:00:00

V09T1024A
Left Upper Wing Skin Temp
Shows wire damage trend

13:56:24 (LOS -3:08)

ASA 4

40/J105



1 Feb 2003 13:56:24.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 8.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



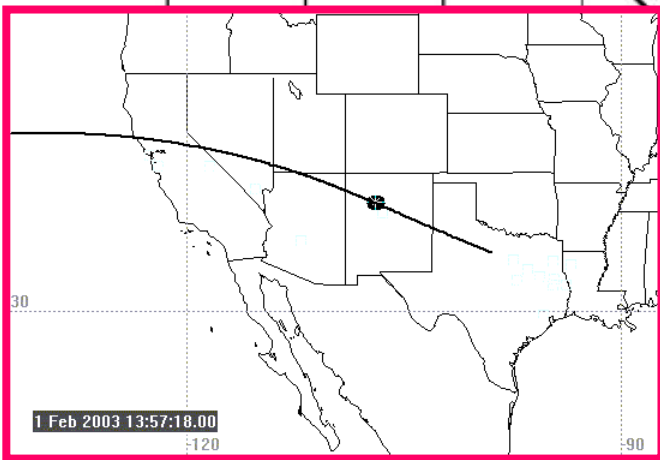
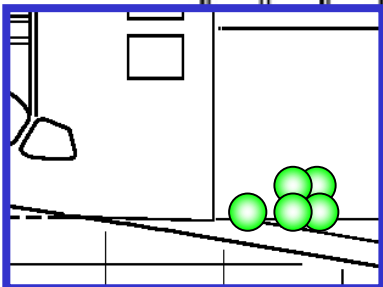
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51P0570A
 MLG LH Outbd Tire Pressure 1
 Off Nominal rise (1 bit)

13:57:19 (LOS -2:13)

ASA 4

40/J105

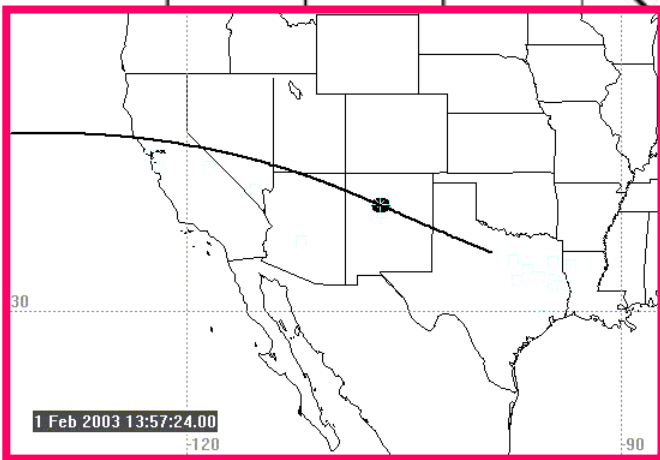
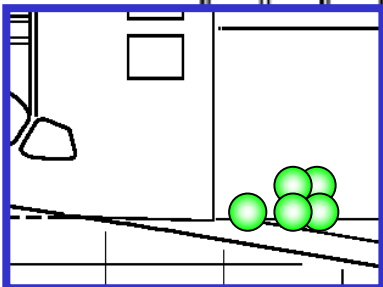
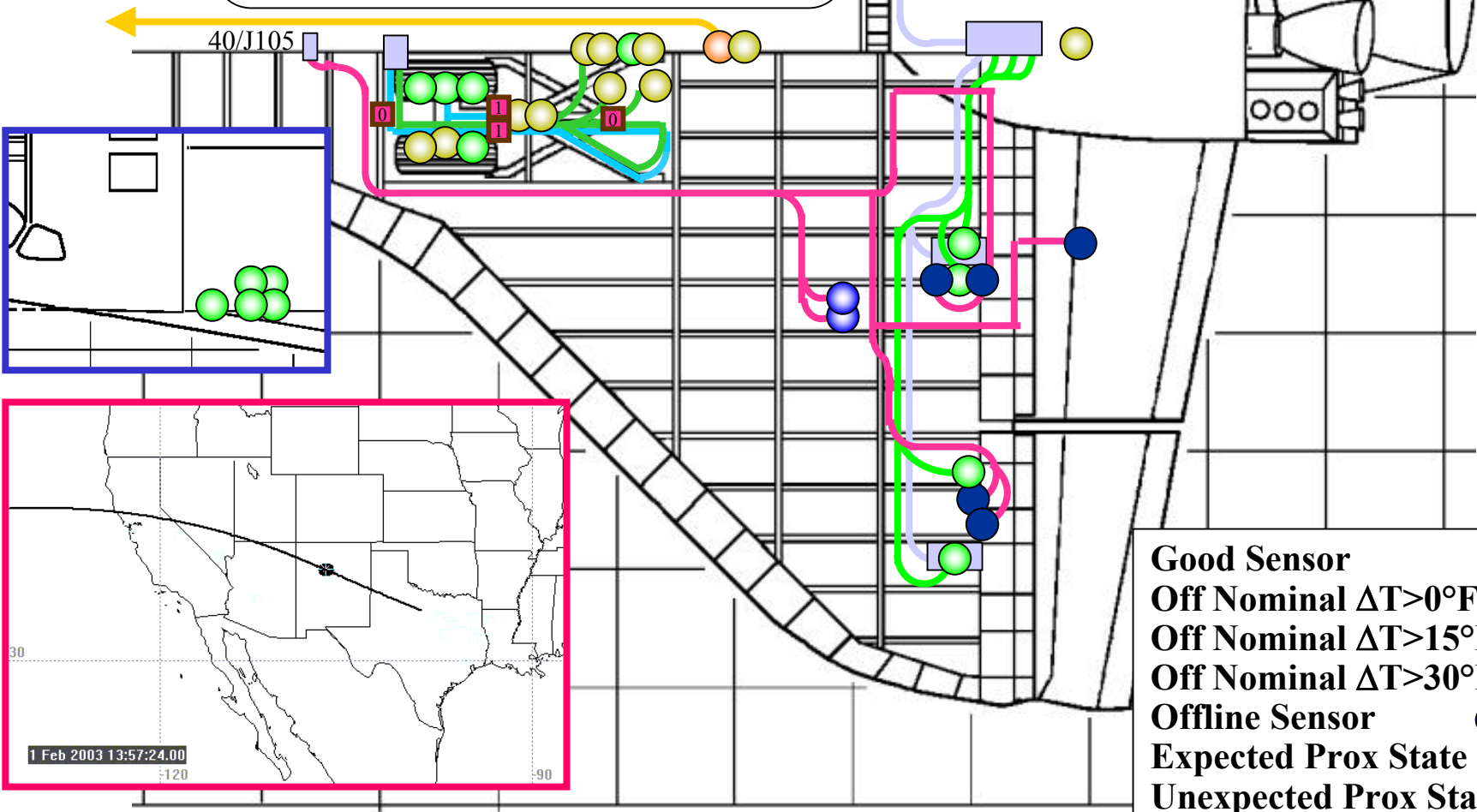


- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



Debris #16 - 16th report of debris observed leaving the Orbiter (time is ± 5 sec)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

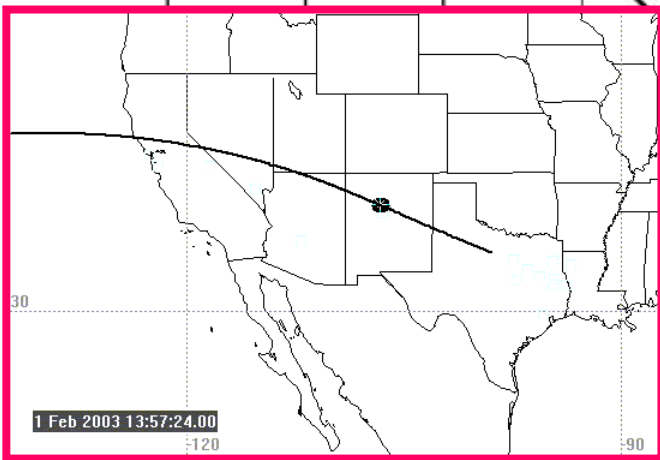
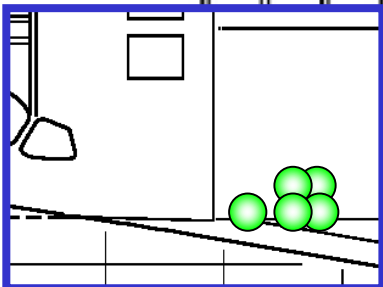
GMT 14:00:00

V51P0572A
MLG LH Outbd Tire Pressure 2
Off Nominal rise (1 bit)

13:57:24 (LOS -2:08)

ASA 4

40/J105



1 Feb 2003 13:57:24.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 8.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

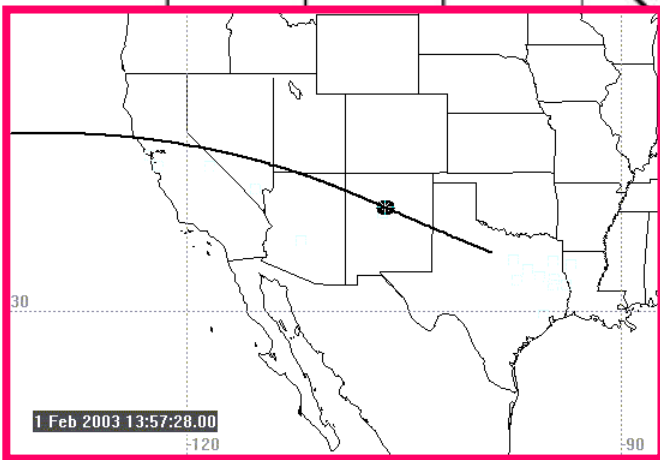
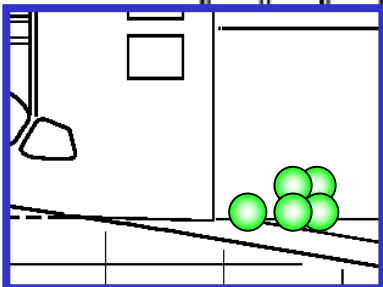
GMT 14:00:00

V09T1002A
Left Lower Wing Skin Temp
Goes off line

13:57:28 (LOS -2:04)

ASA 4

40/J105



1 Feb 2003 13:57:28.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 8.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

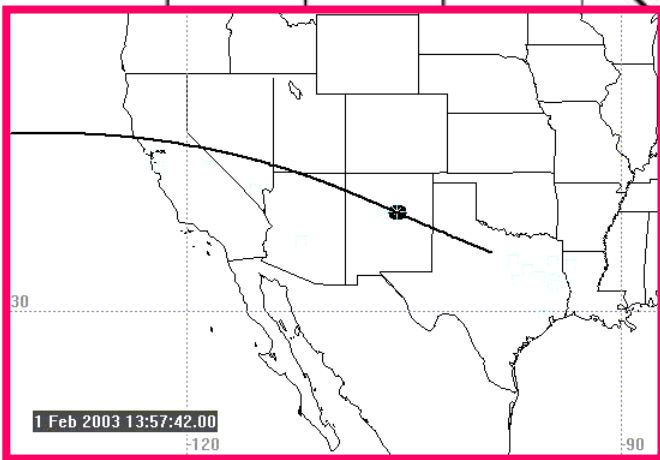
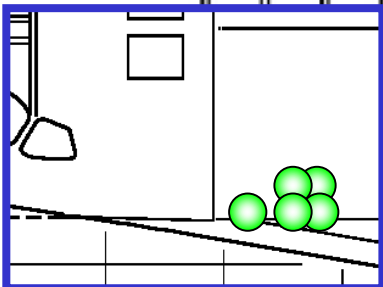
GMT 14:00:00

V09T1024A
Left Upper Wing Skin Temp
Goes off line

13:57:43 (LOS -1:49)

ASA 4

40/J105



1 Feb 2003 13:57:42.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 8.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

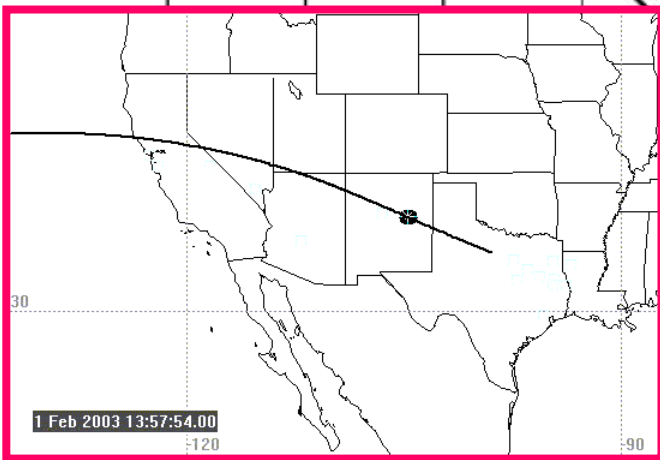
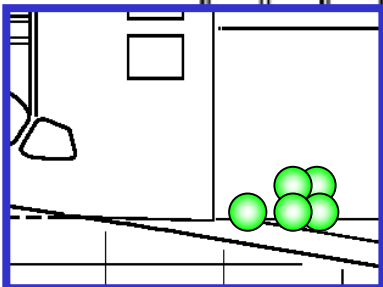
GMT 14:00:00

V58T0841A
System 2 LH Aft Brake
Switch Valve Return Temp
Off Nominal temp rise

13:57:54 (LOS -1:38)

ASA 4

40/J105



1 Feb 2003 13:57:54.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 8.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

X₀ 1548.963



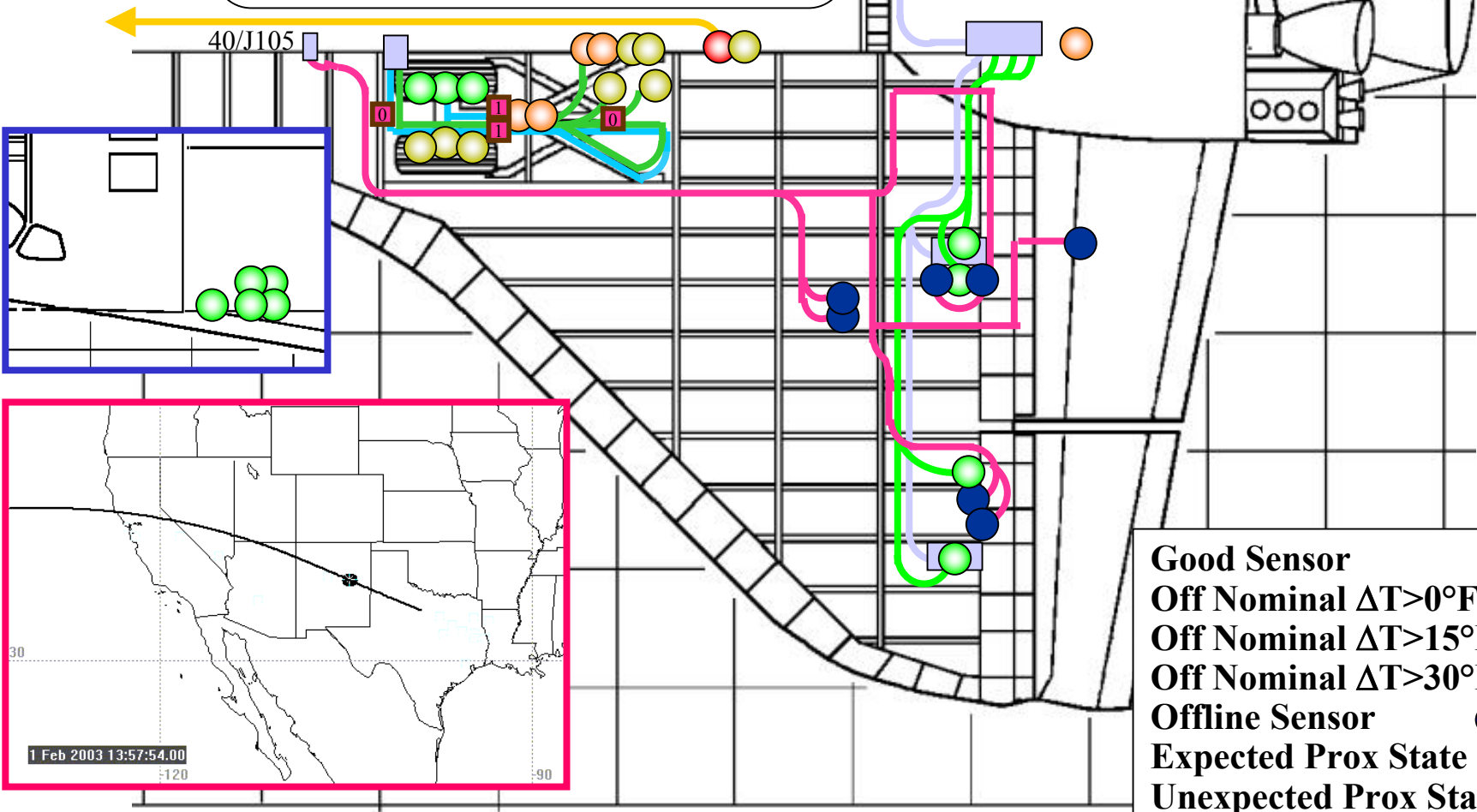
GMT 13:52:00

LOS 13:59:32

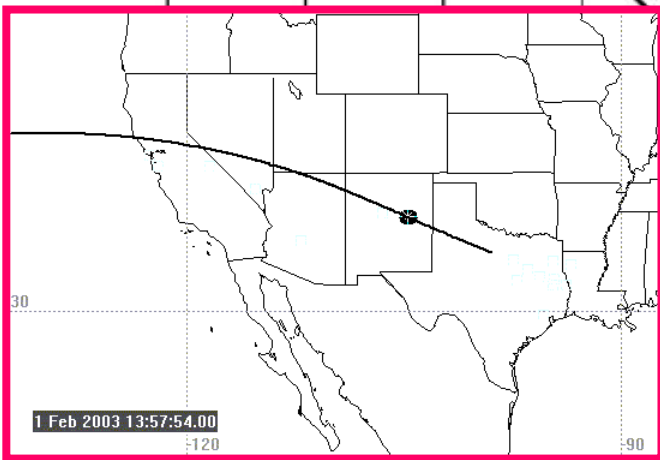
GMT 14:00:00

Flare 1: Asymmetrical brightening of Orbiter shape observed

13:57:55 (LOS -1:37)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



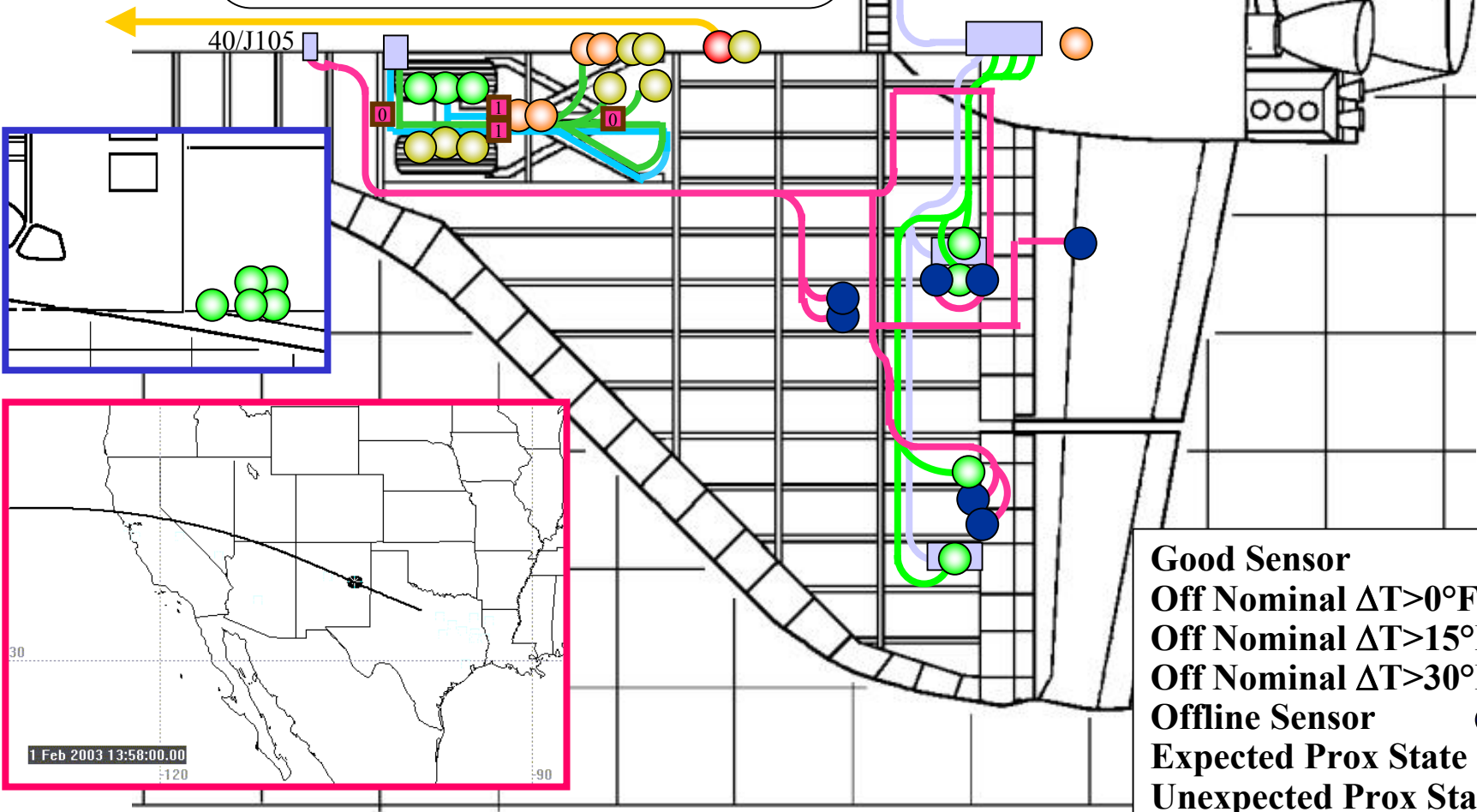
GMT 13:52:00

LOS 13:59:32

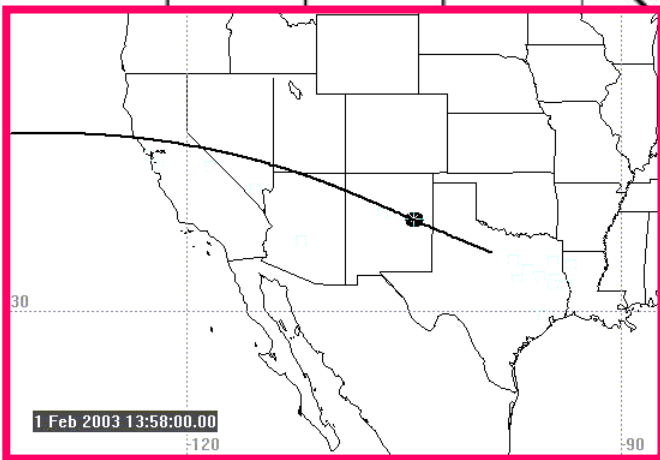
GMT 14:00:00

Flare 2: Asymmetrical brightening of Orbiter shape observed

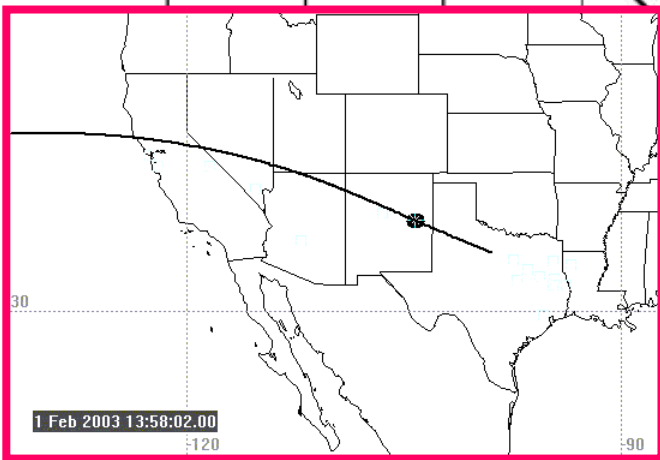
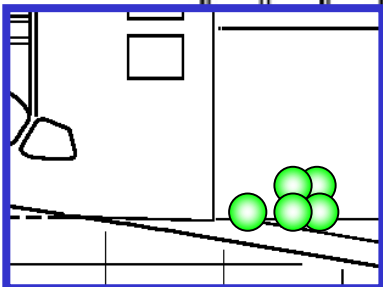
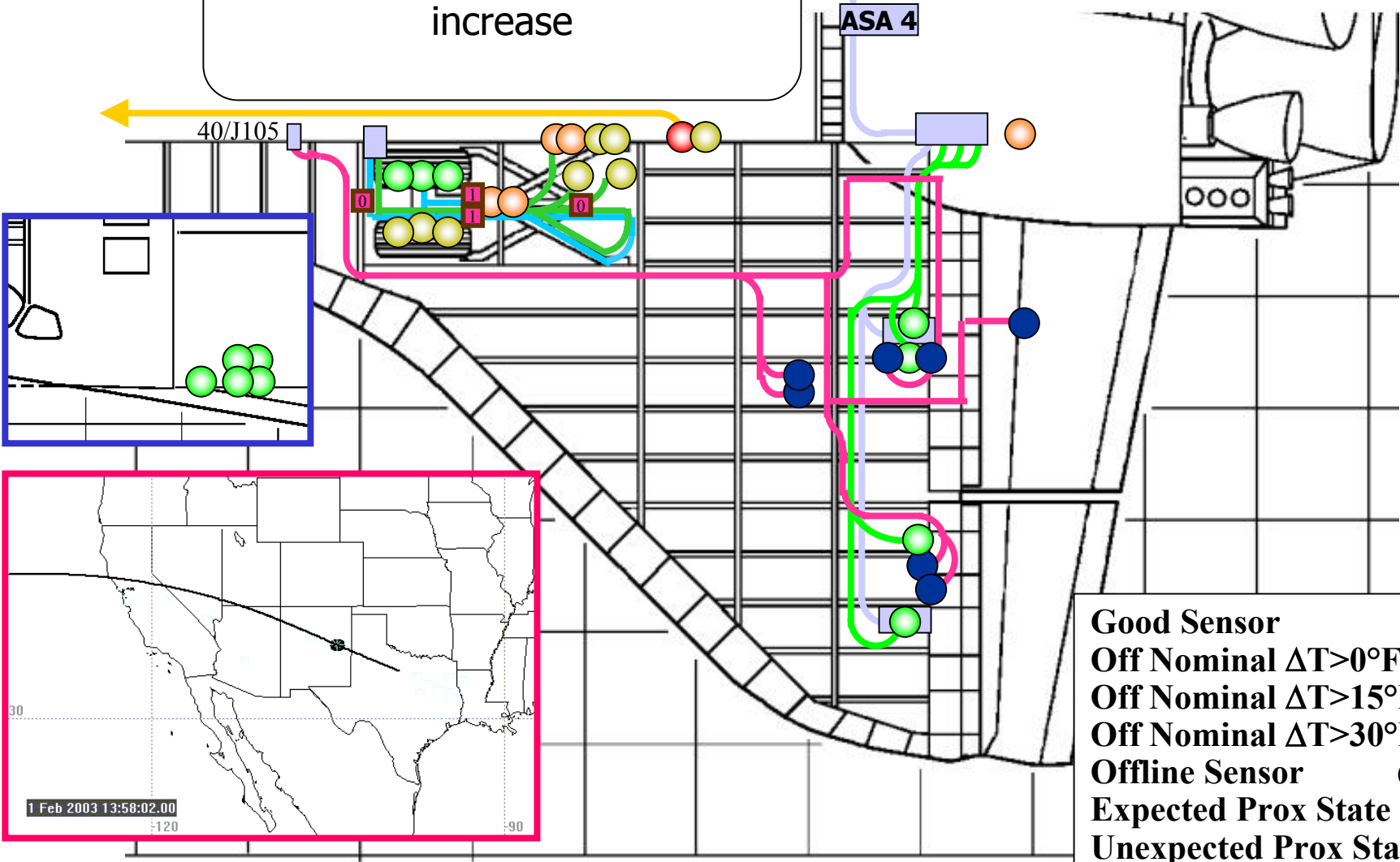
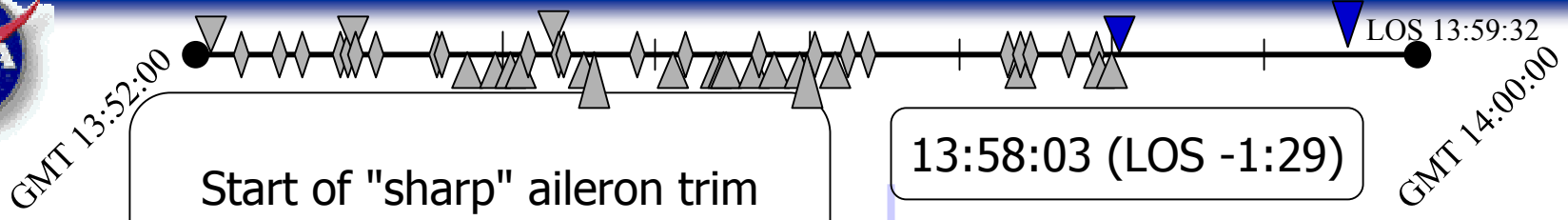
13:58:00 (LOS -1:32)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



Good Sensor	
Off Nominal $\Delta T > 0^\circ\text{F}$	
Off Nominal $\Delta T > 15^\circ\text{F}$	
Off Nominal $\Delta T > 30^\circ\text{F}$	
Offline Sensor	
Expected Prox State	
Unexpected Prox State	

X₀18.493 X₀1036.587 X₀1184.881 X₀1292.775 X₀1420.869 X₀1548.963



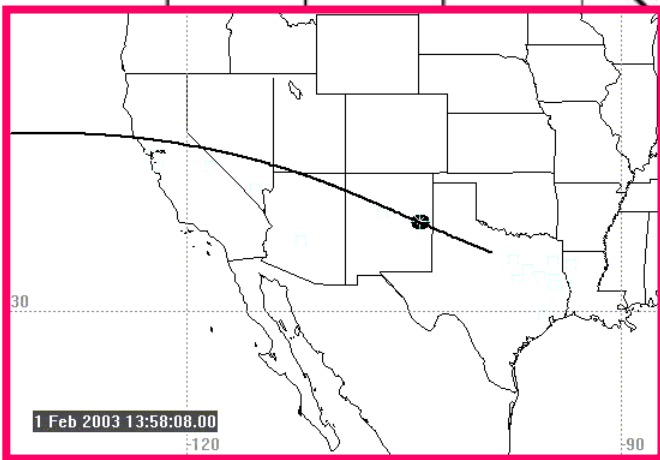
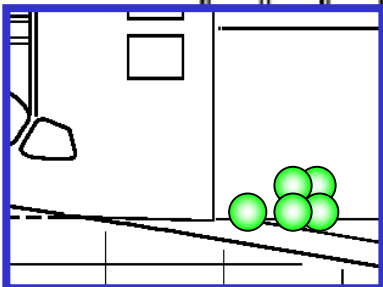
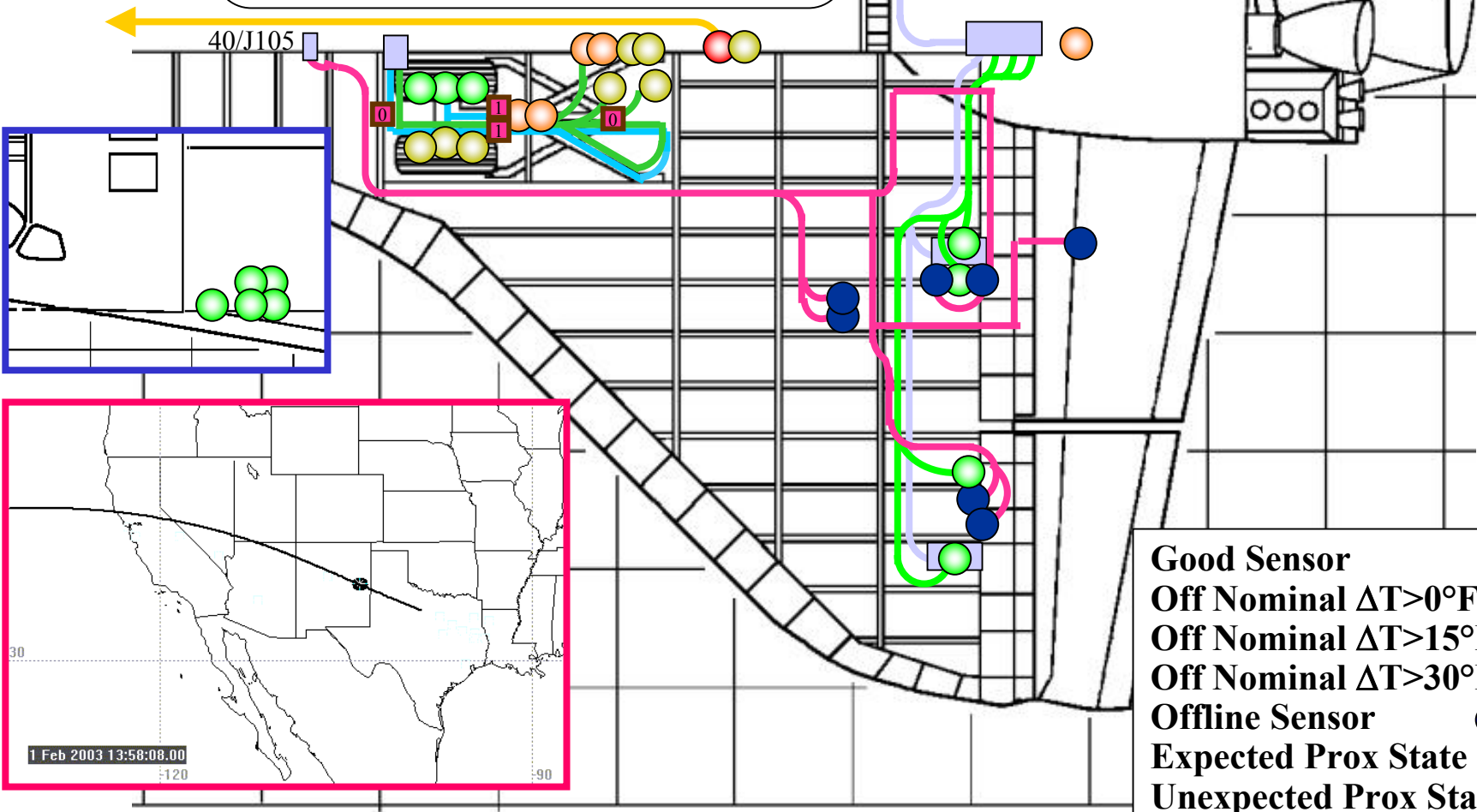
GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Increase in derived rolling and yawing moment increments

13:58:09 (LOS -1:23)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

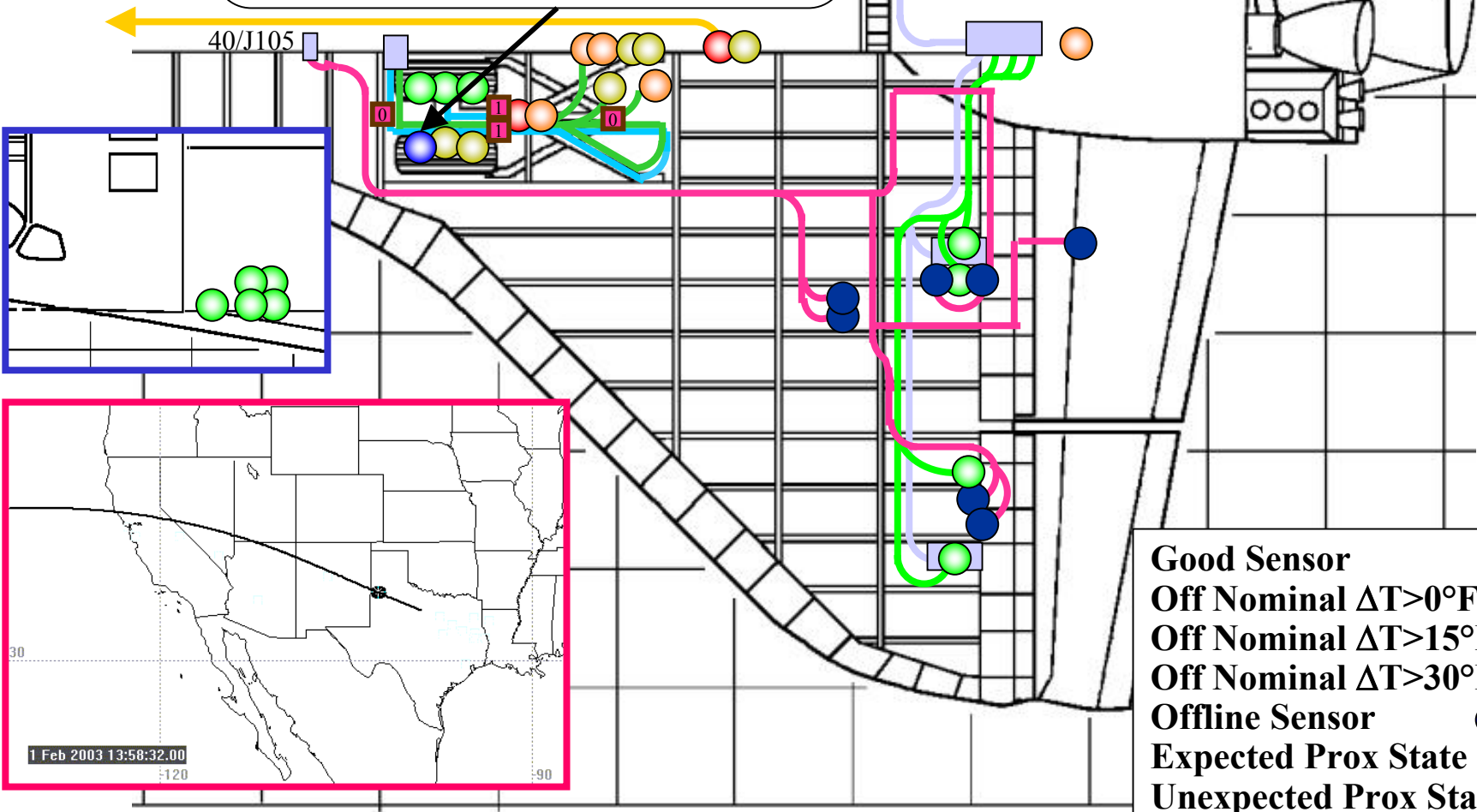
18.493
 X_0 1036.587
 X_0 1184.881
 X_0 1292.775
 X_0 1420.869
 X_0 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51P0570A
**Main Landing Gear Left Hand
 Outboard Tire Press 1
 Shows wire damage trend**

13:58:32 (LOS -1:00)



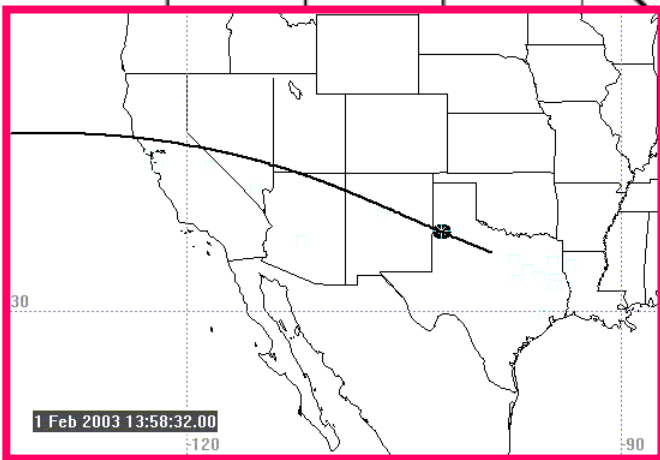
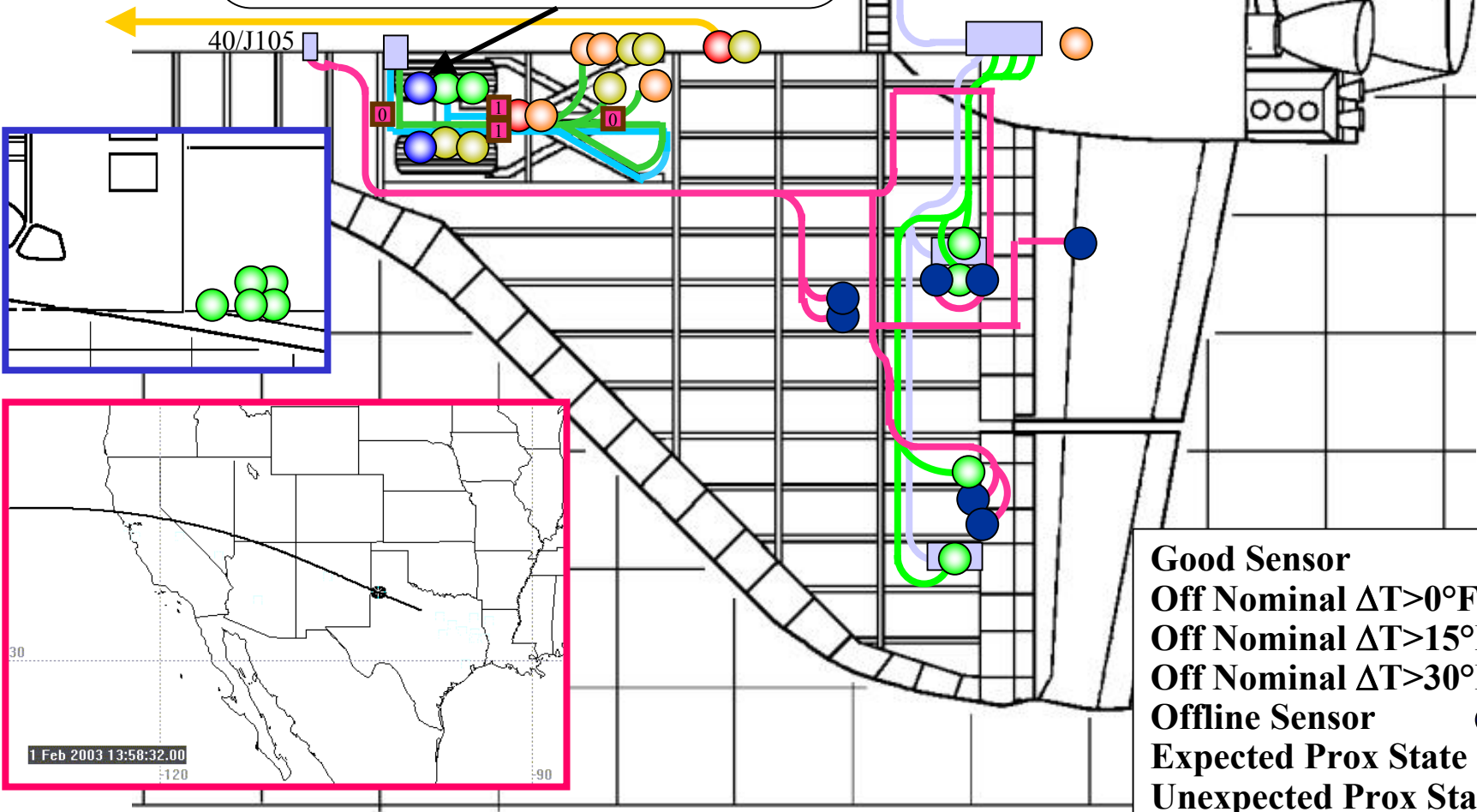
- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X0 18.493 X0 1036.587 X0 1184.881 X0 1292.775 X0 1420.869 X0 1548.963



GMT 13:52:00 LOS 13:59:32
 13:58:32 (LOS -1:00) GMT 14:00:00

V51P0571A
**Main Landing Gear Left Hand
 Inboard Tire Press 1**
 Shows wire damage trend



X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



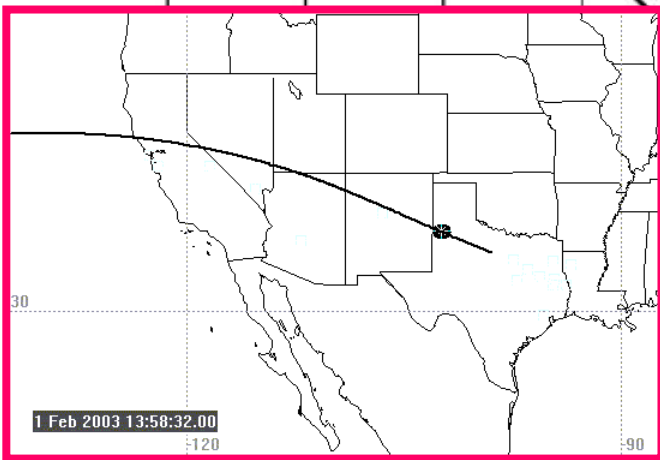
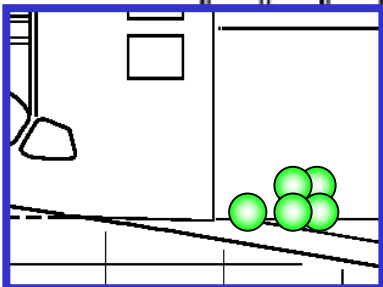
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51T0574A
 MLG Left Outboard
 Wheel Temp
 Shows wire damage trend

13:58:32 (LOS -1:00)

ASA 4

40/J105



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



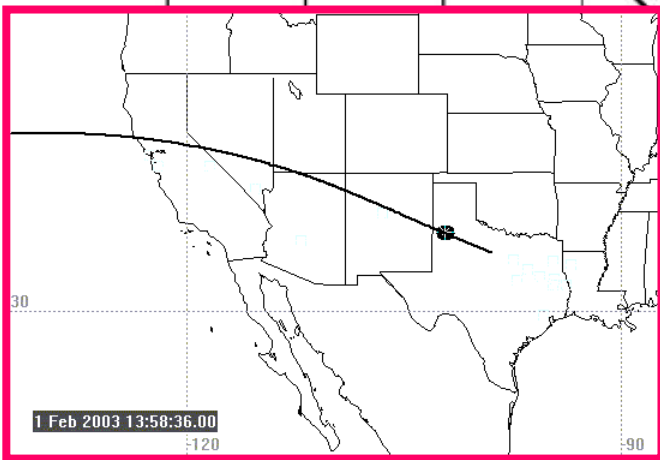
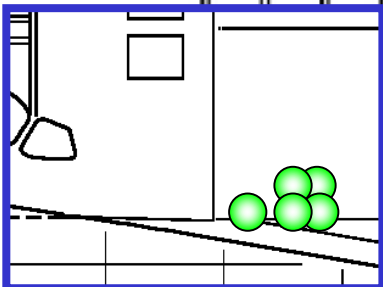
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51T0575A
**Main Landing Gear Left Hand
 Inboard Wheel Temp
 Shows wire damage trend**

13:58:36 (LOS -0:56)

ASA 4

40/J105



1 Feb 2003 13:58:36.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

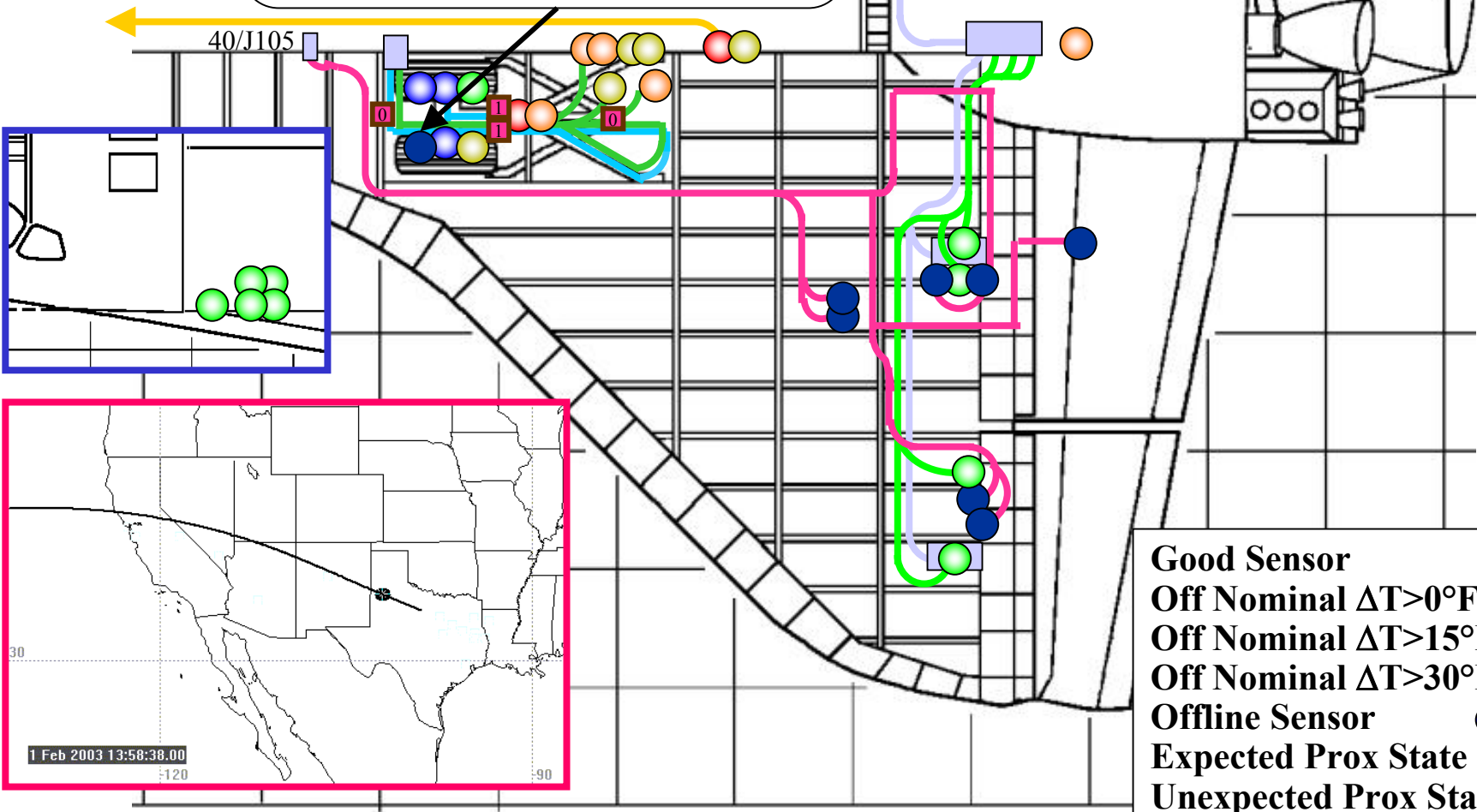
X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



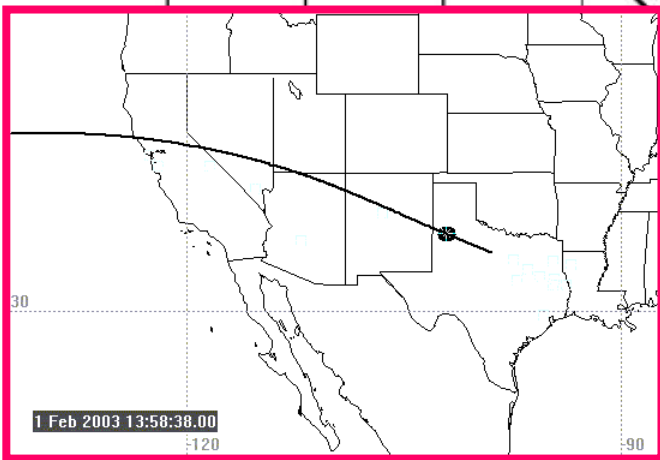
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51P0570A
**Main Landing Gear Left Hand
 Outboard Tire Press 1
 Goes off line**

13:58:38 (LOS -0:54)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



8.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



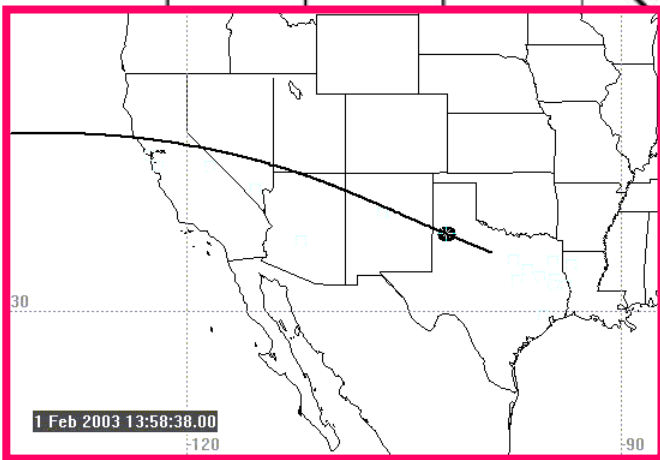
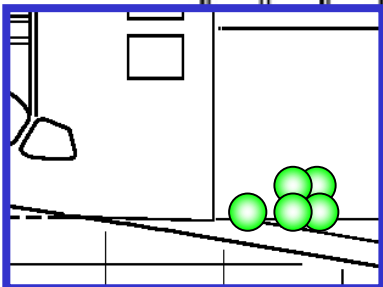
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51T0574A
 MLG Left Outboard
 Wheel Temp
 Goes off line

13:58:39 (LOS -0:53)

ASA 4

40/J105



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



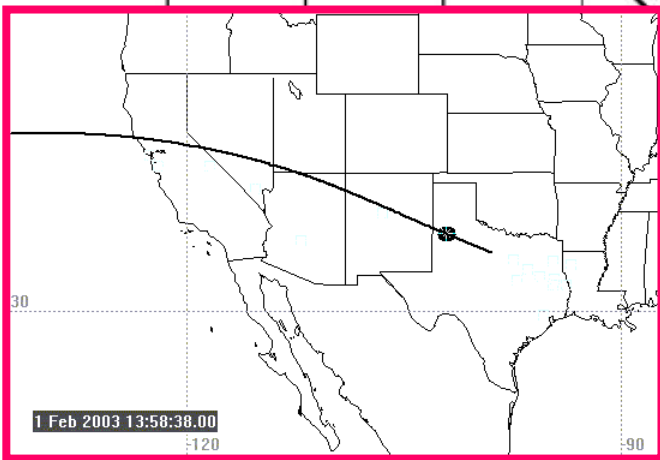
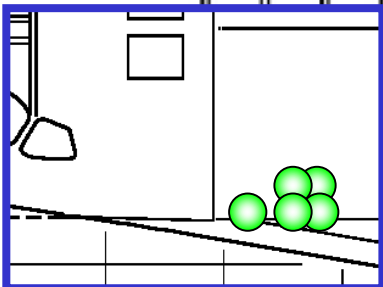
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51P0572A
**Main Landing Gear Left Hand
 Outboard Tire Press 2
 Shows wire damage trend**

13:58:39 (LOS -0:53)

ASA 4

40/J105



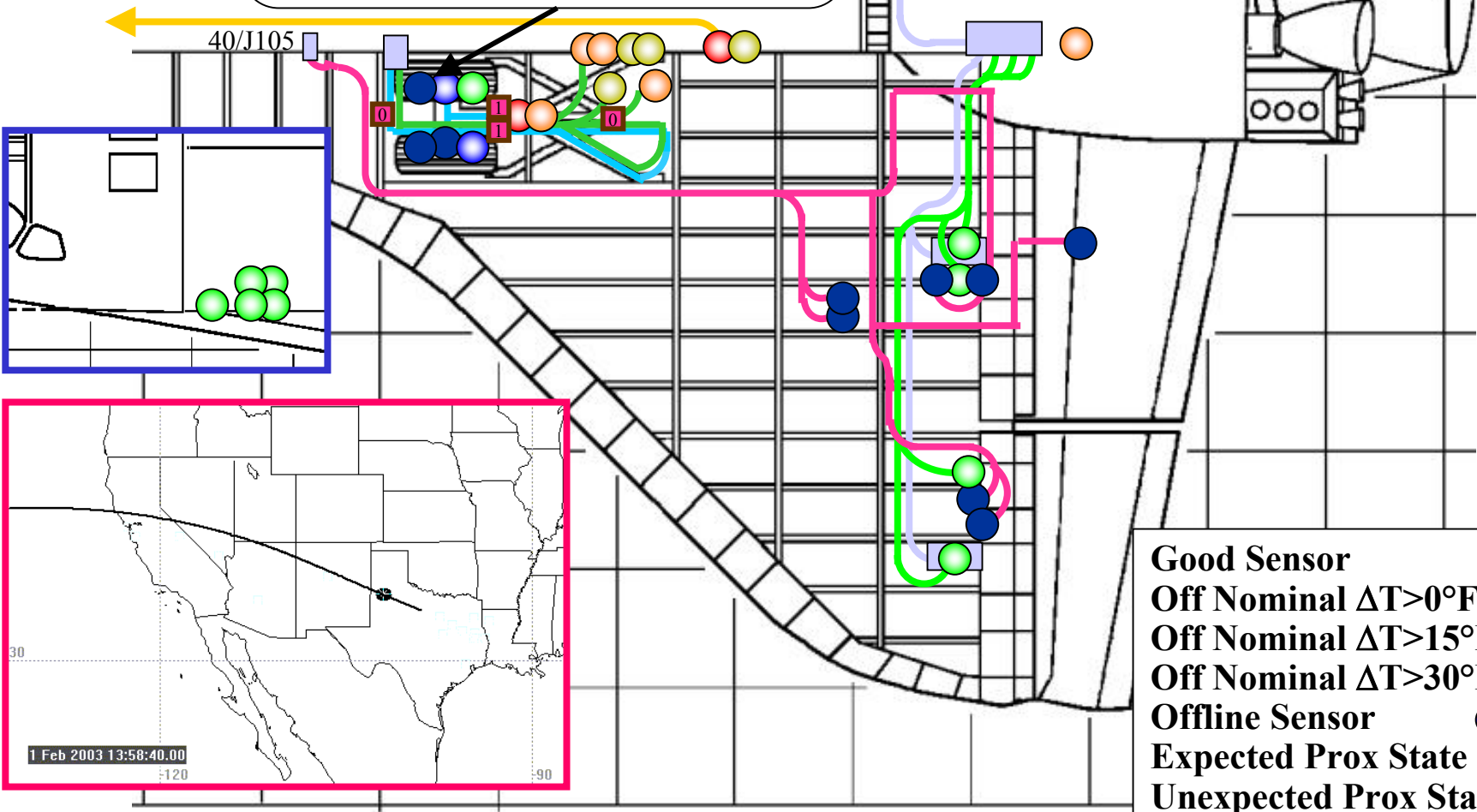
- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963

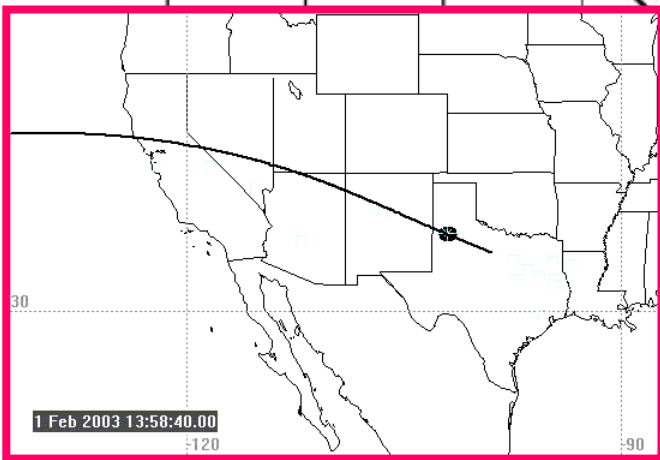


GMT 13:52:00 LOS 13:59:32
 13:58:40 (LOS -0:52) GMT 14:00:00

V51P0571A
**Main Landing Gear Left Hand
 Inboard Tire Press 1
 Goes off line**



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



1 Feb 2003 13:58:40.00

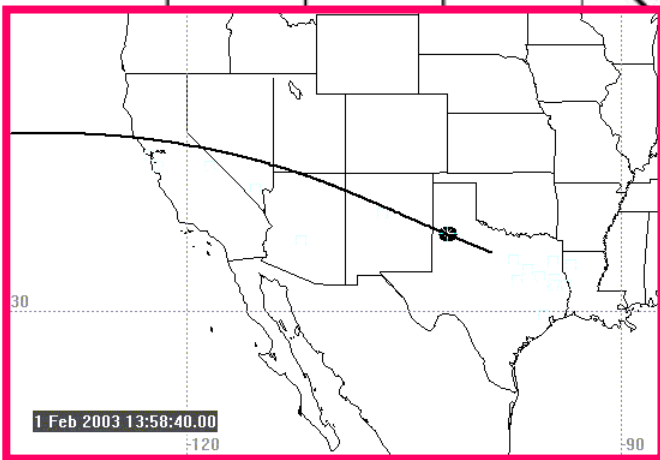
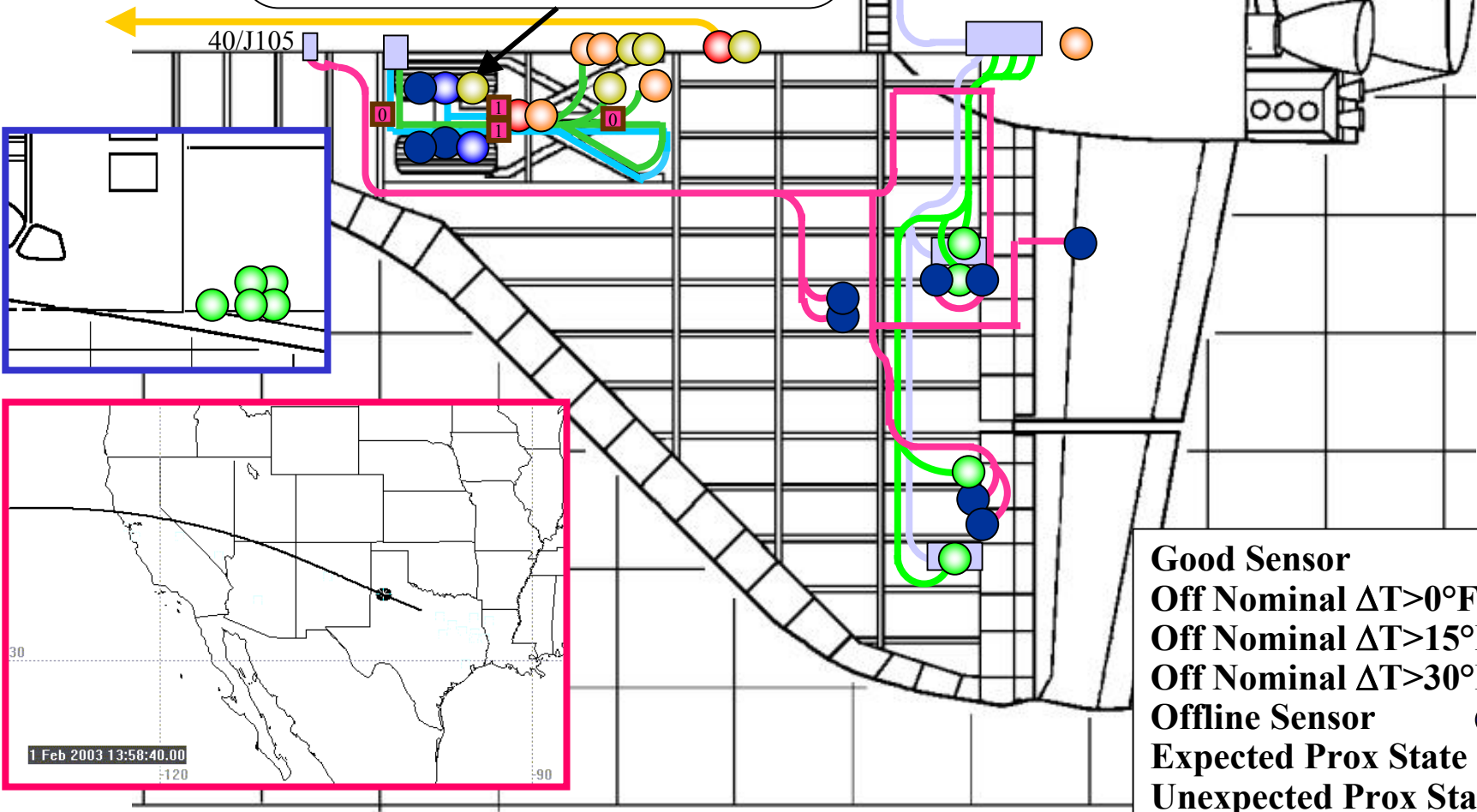
X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51P0573A
**Main Landing Gear Left Hand
 Inboard Tire Press 2**
 Shows 3.5 psia rise in 2 sec

13:58:41 (LOS -0:51)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



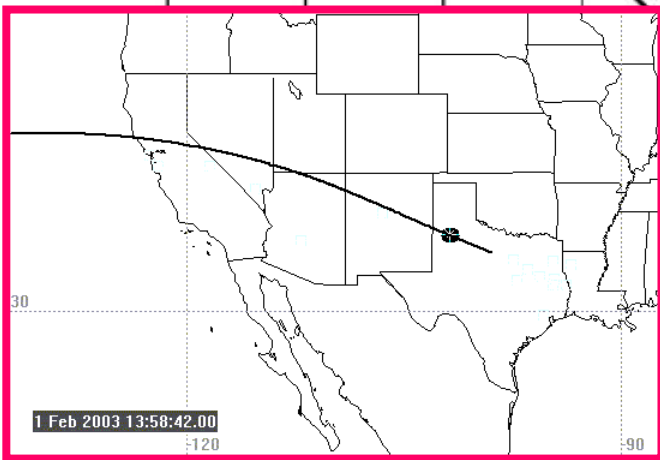
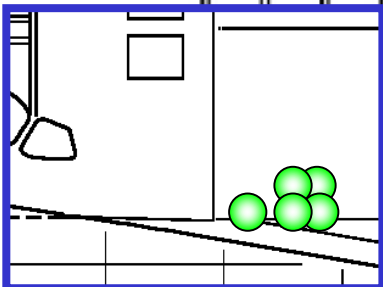
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51P0573A
**Main Landing Gear Left Hand
 Inboard Tire Press 2
 Shows wire damage trend**

13:58:43 (LOS -0:49)

ASA 4

40/J105



1 Feb 2003 13:58:42.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

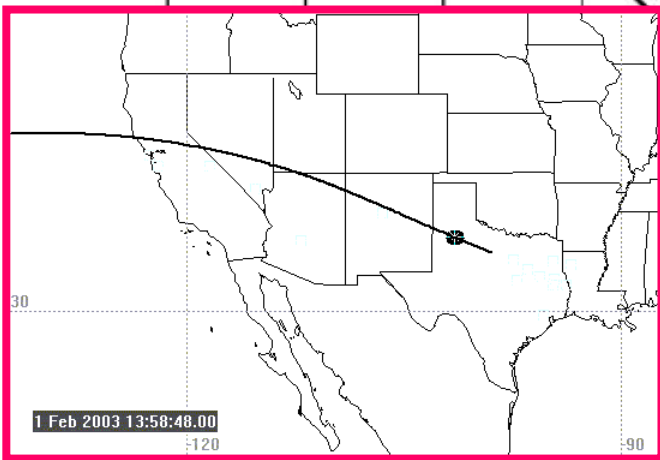
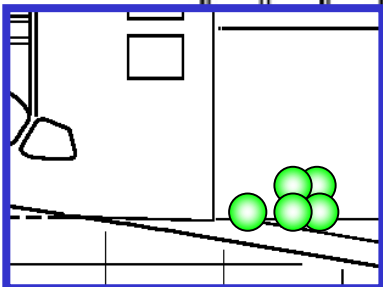
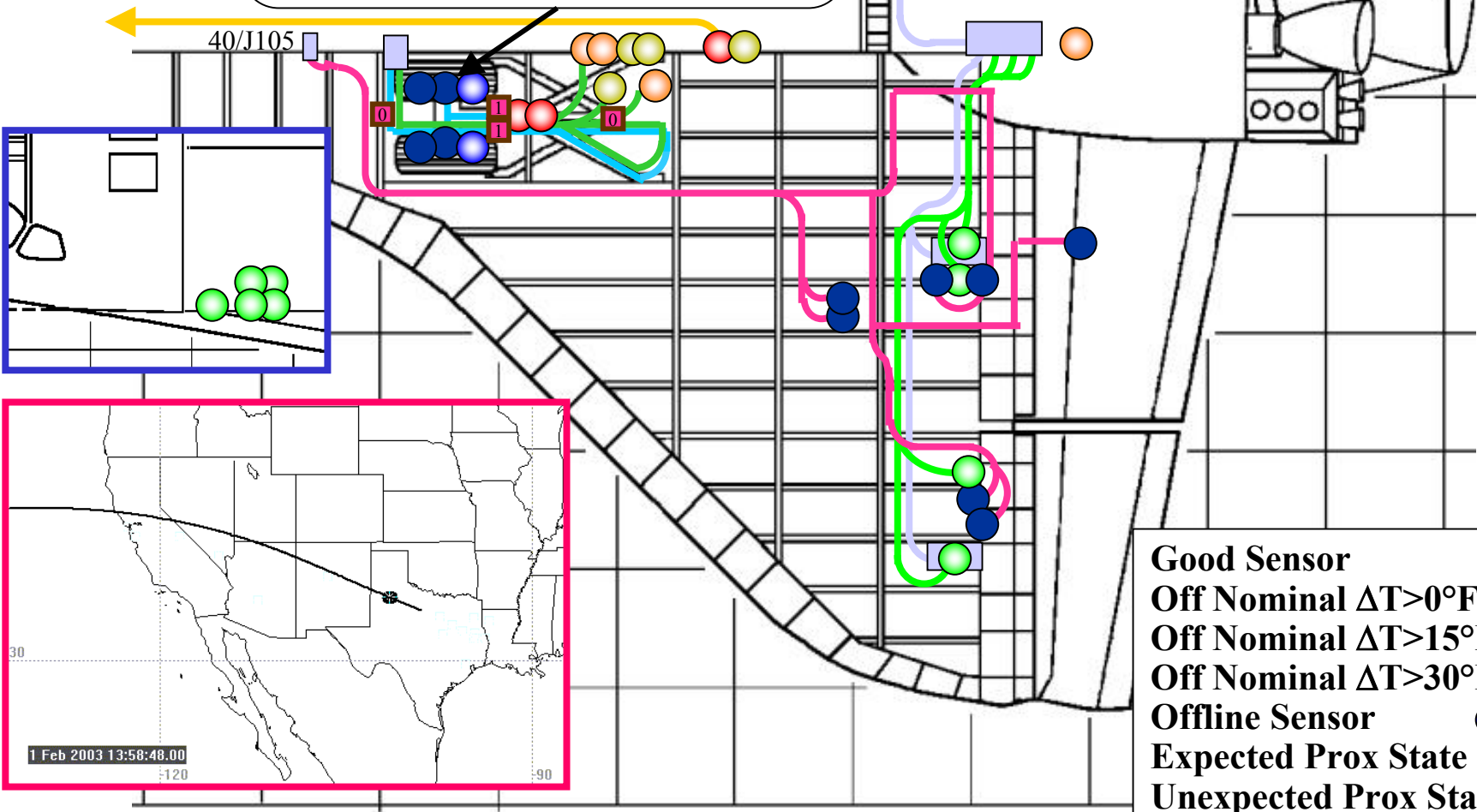
X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51T0575A
**Main Landing Gear Left Hand
 Inboard Wheel Temp
 Goes off line**

13:58:48 (LOS -0:44)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

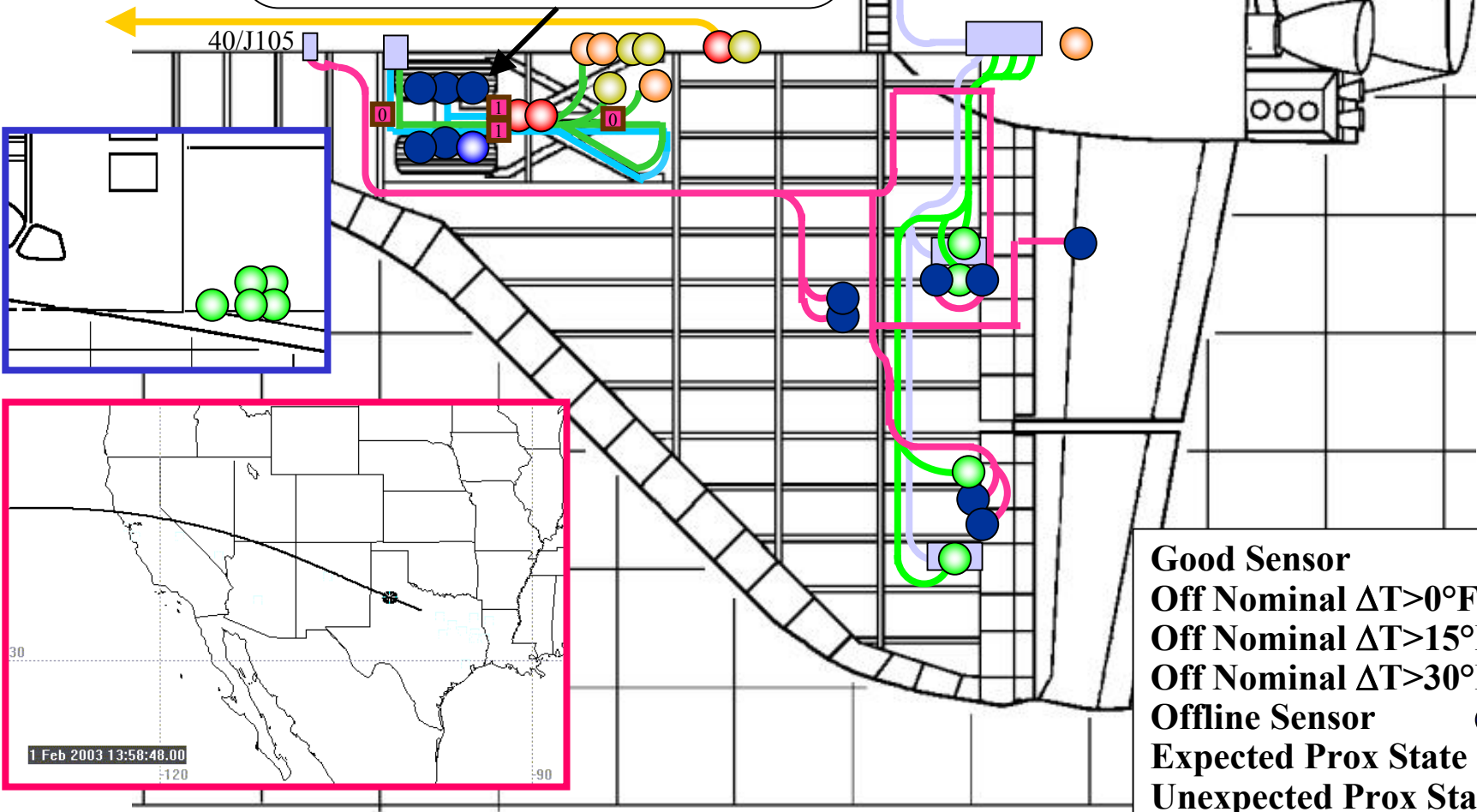
X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



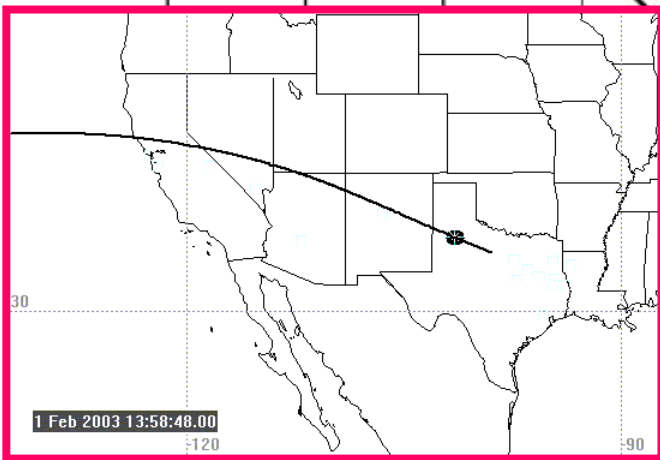
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51P0573A
**Main Landing Gear Left Hand
 Inboard Tire Press 2
 Goes off line**

13:58:48 (LOS -0:44)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

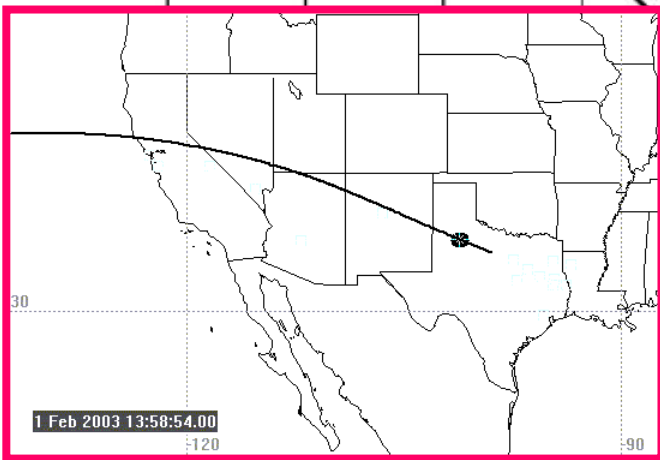
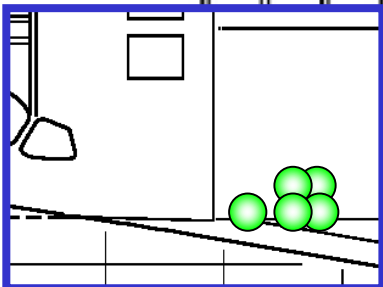
GMT 14:00:00

V51P0572A
Main Landing Gear Left Hand
Outboard Tire Press 2
Goes off line

13:58:54 (LOS -0:38)

ASA 4

40/J105



1 Feb 2003 13:58:54.00

- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

X₀ 8.493

X₀ 1036.587

X₀ 1184.881

X₀ 1292.775

X₀ 1420.869

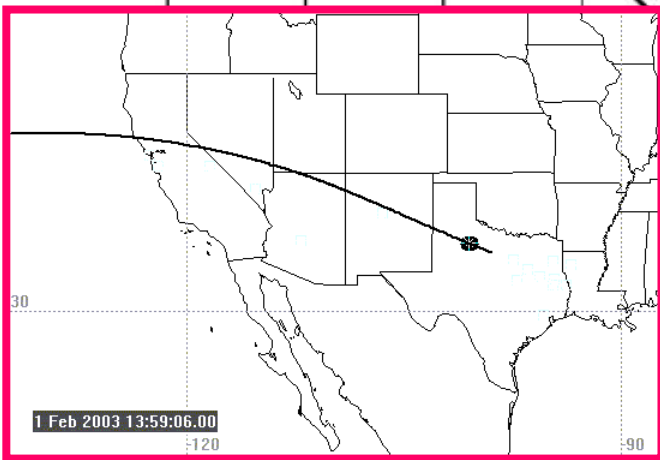
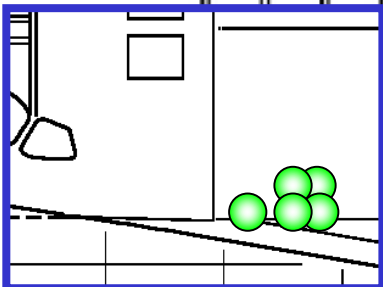
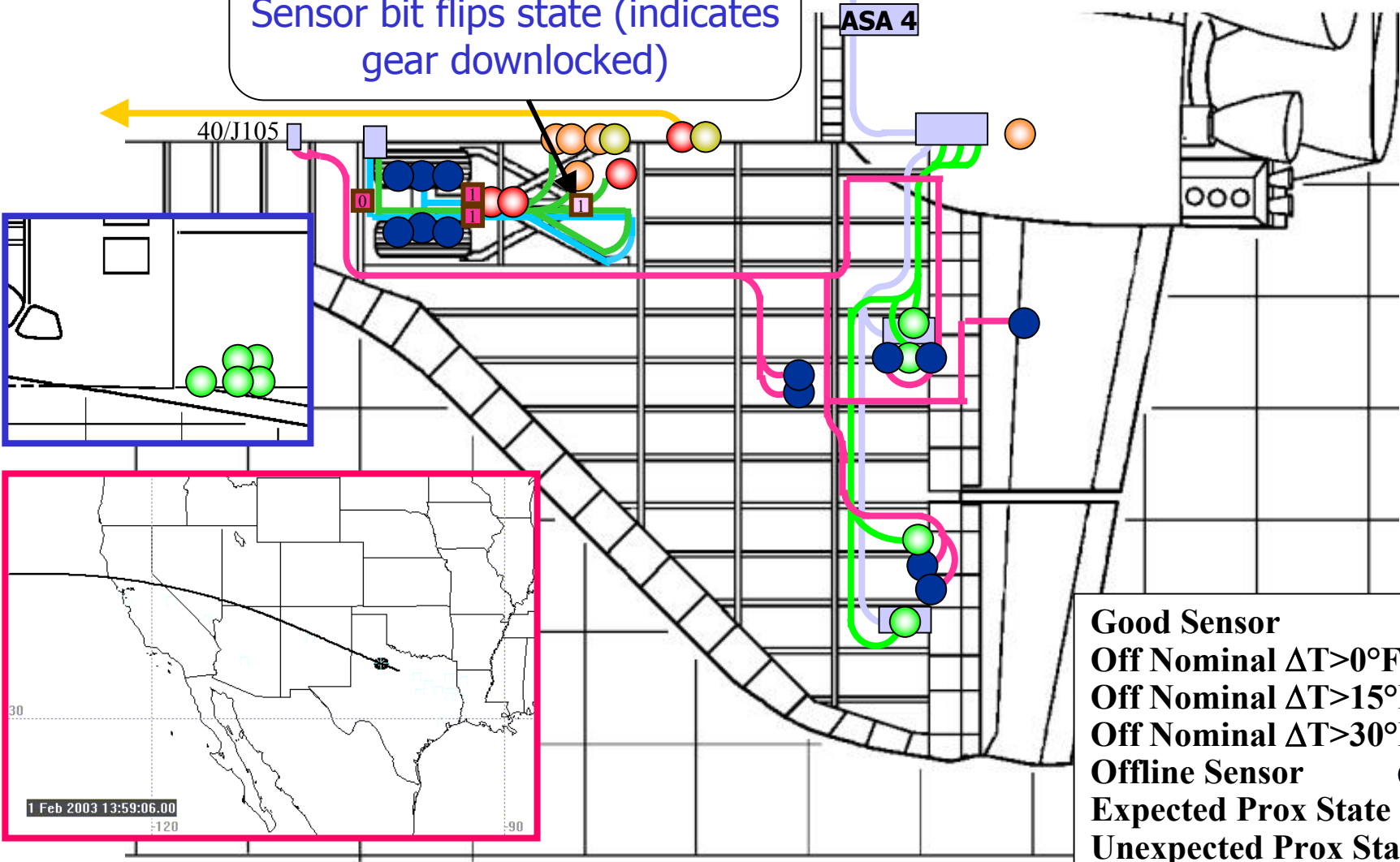
X₀ 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V51X0125E
 Left Main Gear Downlocked
 Sensor bit flips state (indicates gear downlocked)

13:59:06 (LOS -0:26)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

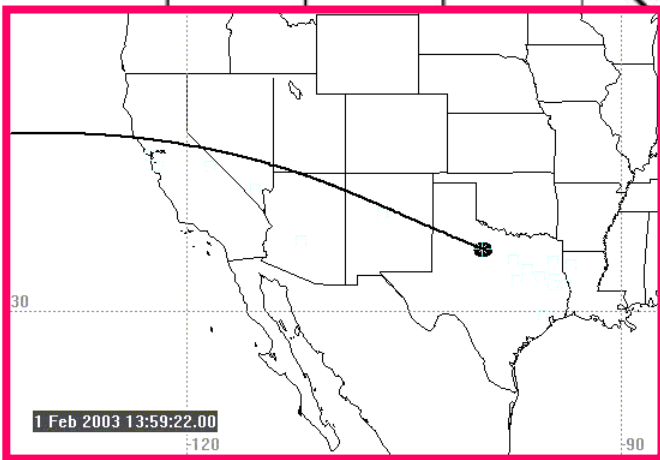
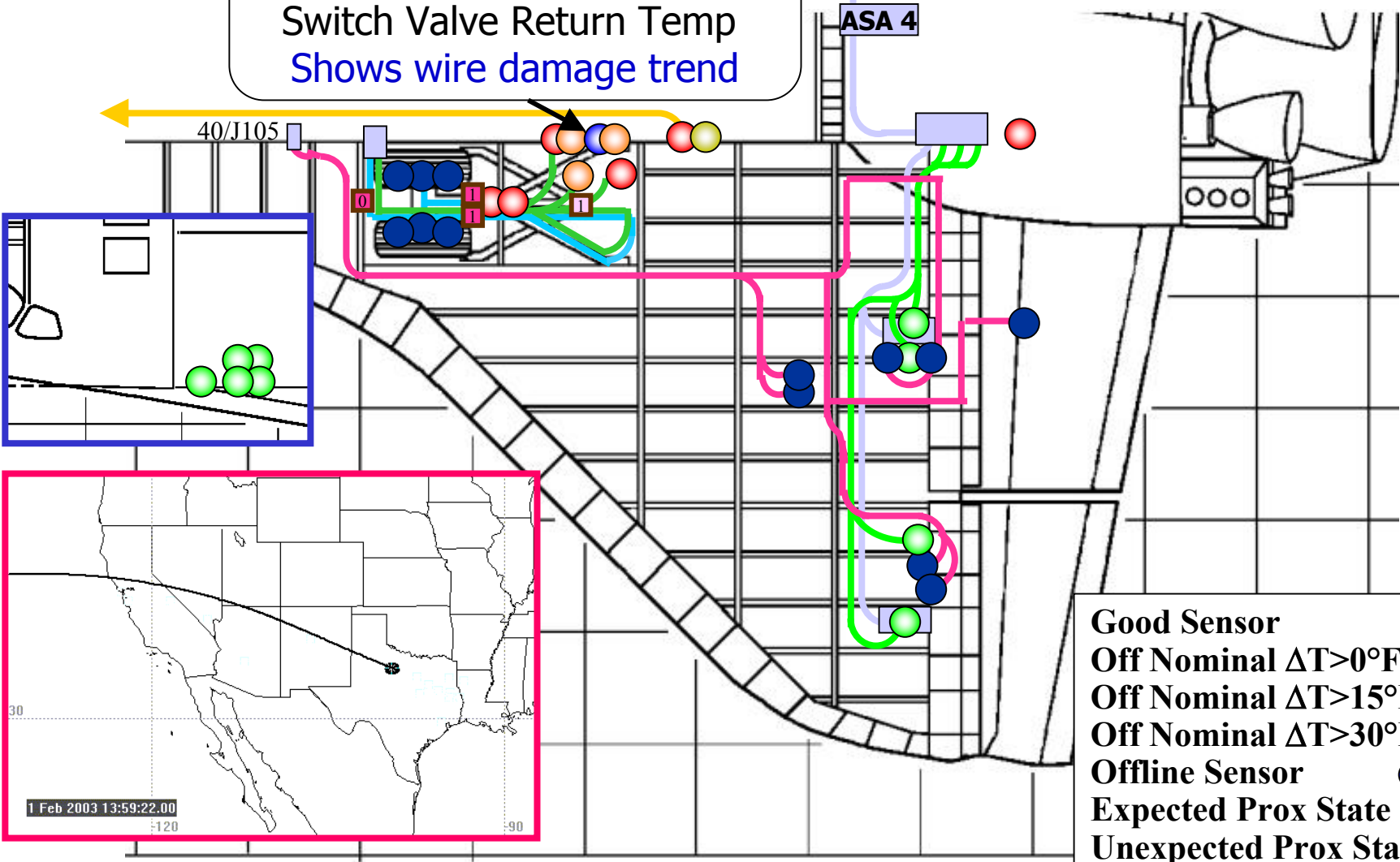
X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

V58T0841A
 System 2 LH Aft Brake
 Switch Valve Return Temp
 Shows wire damage trend

13:59:22 (LOS -0:10)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■

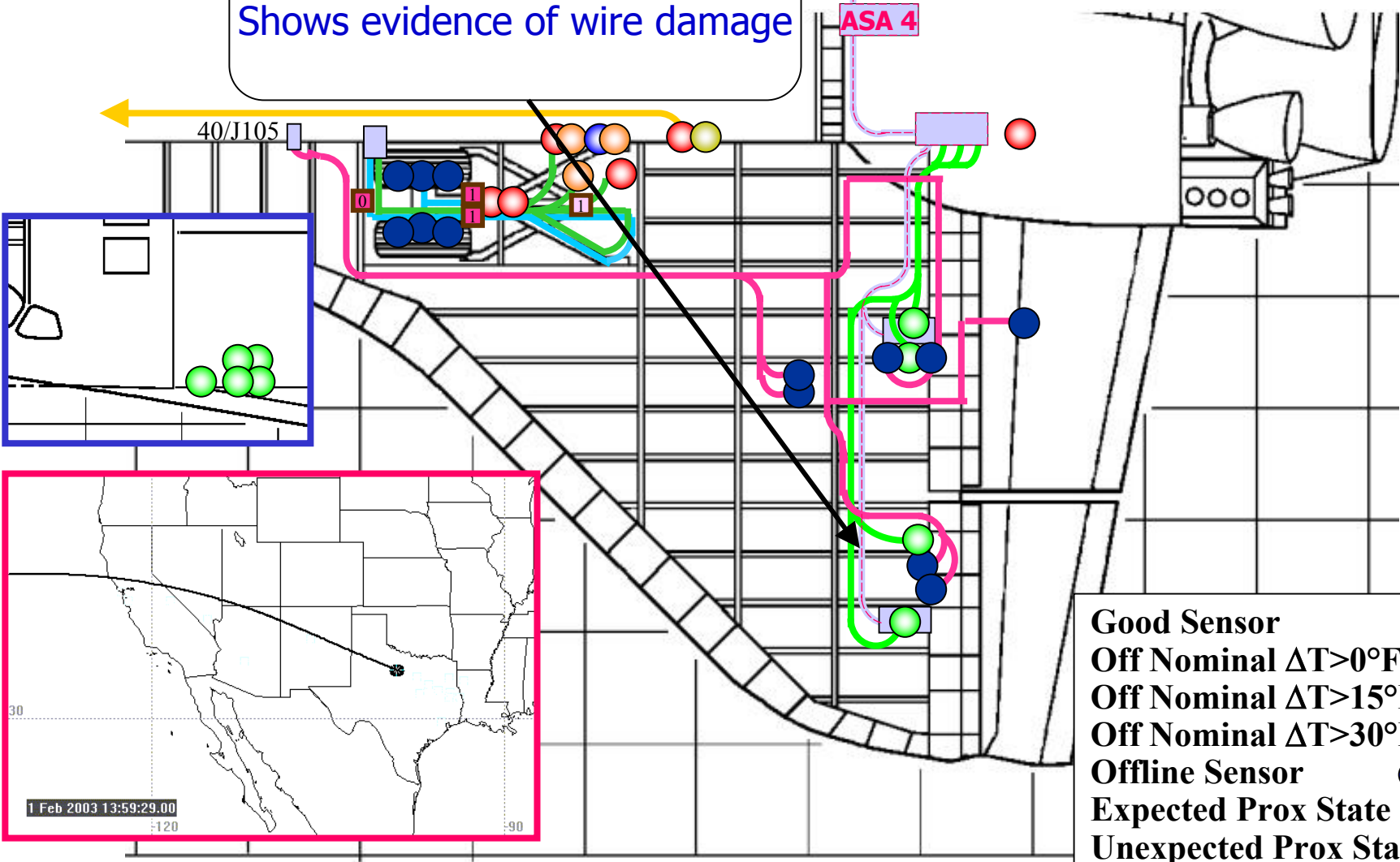
X₀ 18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



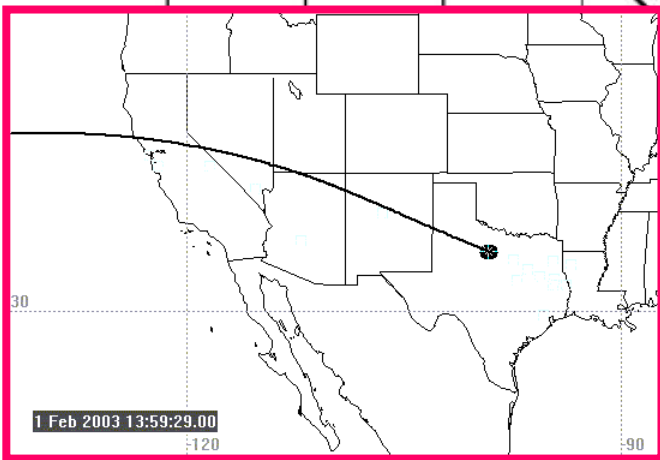
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

ASA 4 Wiring to left wing
 Shows evidence of wire damage

13:59:31 (LOS -0:01)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



1 Feb 2003 13:59:29.00

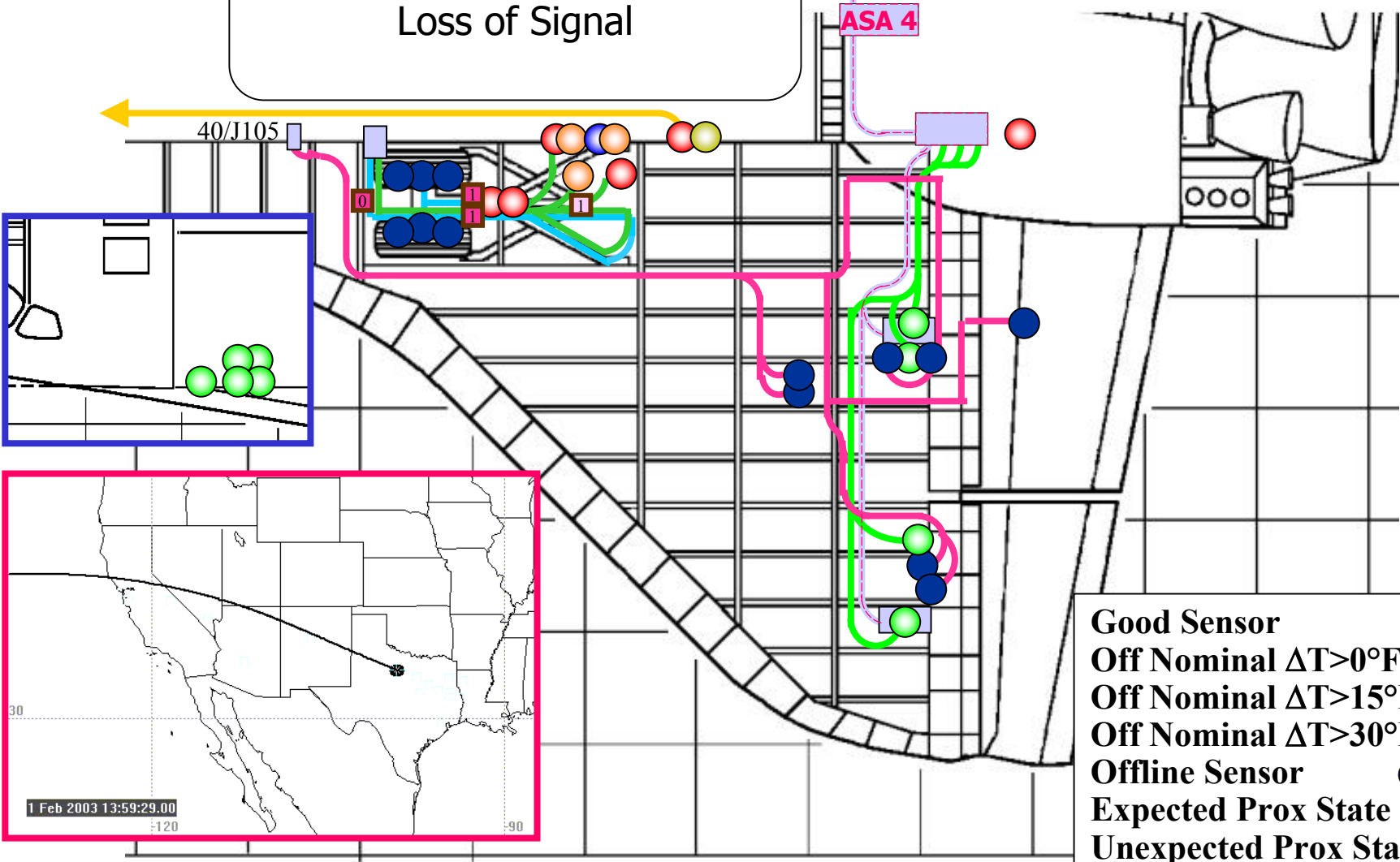
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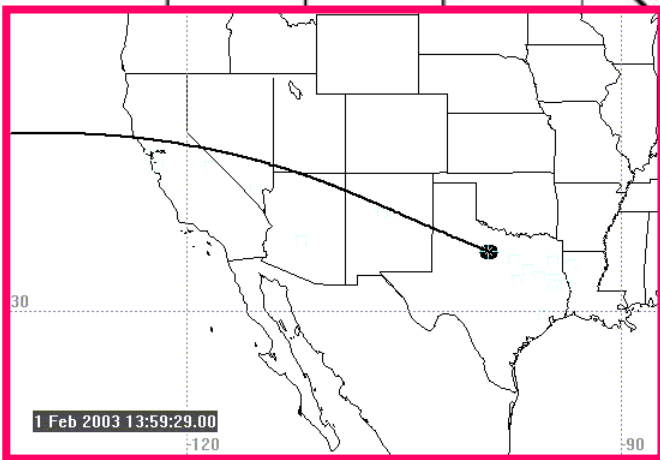
GMT 13:52:00 LOS 13:59:32
 GMT 14:00:00

Just prior to
Loss of Signal

13:59:32 (LOS -0:00)



- Good Sensor ●
- Off Nominal $\Delta T > 0^\circ\text{F}$ ●
- Off Nominal $\Delta T > 15^\circ\text{F}$ ●
- Off Nominal $\Delta T > 30^\circ\text{F}$ ●
- Offline Sensor ●
- Expected Prox State ■
- Unexpected Prox State ■



1 Feb 2003 13:59:29.00

18.493 X₀ 1036.587 X₀ 1184.881 X₀ 1292.775 X₀ 1420.869 X₀ 1548.963



GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Sensor Names and MSIDs (I)

No.	Measurement Nomenclature	MSID	No.	Measurement Nomenclature	MSID
1	LMG Brake Line Temp D	V58T1703A	20	MLG LH Inbd Wheel Temp	V51T0575A
2	LMG Brake Line Temp A	V58T1700A	21	MLG LH Inbd Tire Press 2	V51P0573A
3	LMG Brake Line Temp C	V58T1702A	22	MLG LH Outbd Tire Press 2	V51P0572A
4	LH Inbd Elev LWR Skin Temp	V09T1006A	23	Hyd Sys 3 LH Inbd Elvn Rtn Ln Temp	V58T0833A
5	Hyd Sys 3 LOE Rtn Ln T	V58T0394A	24	Hyd Sys 2 LH Otbd Elvn Rtn Ln Temp	V58T0883A
6	Hyd 1 LH Inbd Elvn Actr Rtn Ln T	V58T0157A	25	Hydr Sys LH Inbd Elvn Actr Temp	V58T0830A
7	Hyd Sys 1 LOE Rtn Ln T	V58T0193A	26	Hydr Sys LH Outbd Elvn Actr Temp	V58T0880A
8	Hyd 2 LH Inbd Elvn Actr Rtn Ln T	V58T0257A	27	Mid Fuselage Port (Left) Sill Longeron Temp at x1215	V34T1118A
9	LMG Brake Line Temp B	V58T1701A	28	LH Aft Fuselage Sidewall Temp at x1410	V09T1724A
10	M-Fus Lt BL Temp at 1215	V34T1106A	29	Left Main Gear Up	V51X0100X
11	L Main Gear Strut Actuator Temp	V58T0405A	30	Left Main Gear Door Up	V51X0116X
12	Hyd Sys 1 LMG Uplk Actr Unlk Ln T	V58T0125A	31	Left Main Gear Down	V51X0125E
13	Hyd 3 LH Fwd Brake Sw Vlv Rtn Ln T	V58T0842A	32	Left Main Gear No WOW	V51X0130X
14	LH UPR Wing Skin Temp	V09T1024A	33	Supply H2O dump Nozzle temps A	V62T0440A
15	LH LWR Wing Skin Temp	V09T1002A	34	Supply H2O dump Nozzle temps B	V62T0439A
16	Hyd 2 LH Aft Brake Sw Vlv Rtn Ln T	V58T0841A	35	Waste H2O dump Nozzle temps A	V62T0520A
17	MLG LH Outbd Tire Press 1	V51P0570A	36	Waste H2O dump Nozzle temps B	V62T0519A
18	MLG LH Outbd Wheel Temp	V51T0574A	37	Vacuum vent	V62T0551A
19	MLG LH Inbd Tire Press 1	V51P0571A			



GMT 13:52:00

LOS 13:59:32

GMT 14:00:00

Sensors Names and MSIDs (II)

