Using high-resolution SPoRT SST data and the NASA LIS to initialize the WRF EMS at NWS Houston/Galveston

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HGX Local WRF (2010, Summer 2011)

Workstation Cluster: Two Dell Precision 690 Workstations
Intel Quad Xeon Processor with four 2.33 GHz CPUs (8 CPUs)
RAM: 4 GB
OS: RHEL 5.4

Model: WRF EMS v.3.0.1 beta2 > WRF EMS v.3.1.1.5.1
Core: ARW
Dimension: 129 X 129 > 150 X 150
Spacing: 4 KM
Levels: 35
Length: 30 HR > 36 HR
Time step: 24 seconds
Boundary conditions: NAM 12 KM

2 runs every 6 hours (00, 06, 12, 18 UTC) > 12 hours (00,12 UTC)
First run utilizes SPoRT SST & NASA LIS
Second run utilizes RTG SST HR & NAM PTILE

Microphysics: Lin et al.
Planetary Boundary Layer: Yonsei University Scheme

Summer July-August 2011:

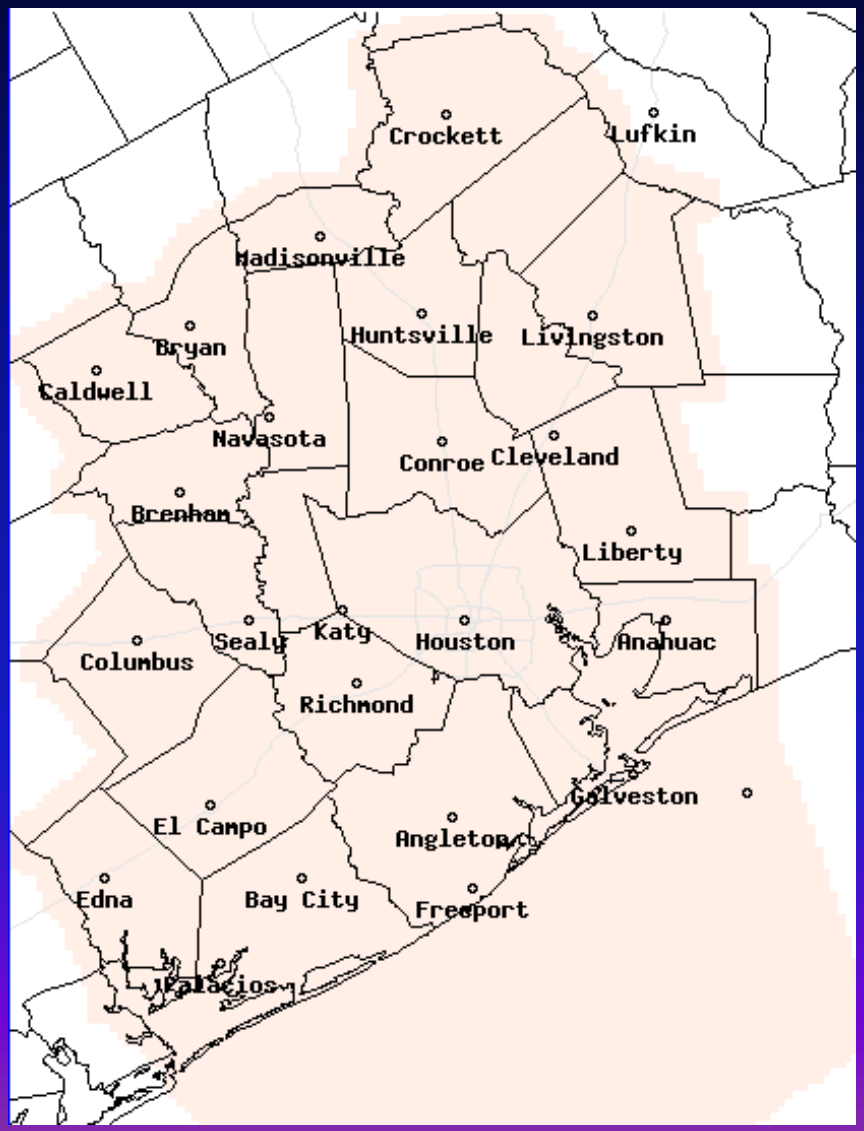
- Focused on the seabreeze and convection in general.
- Examined surface dew point temps, winds, and temps.
- Examined WRF forecast reflectivity and compared to the observed reflectivity.

Winter 2009-2010:

- Focused at different flow regimes (onshore - WAA, offshore- CAA, near coast surface low development).
- Examined surface temps and winds.

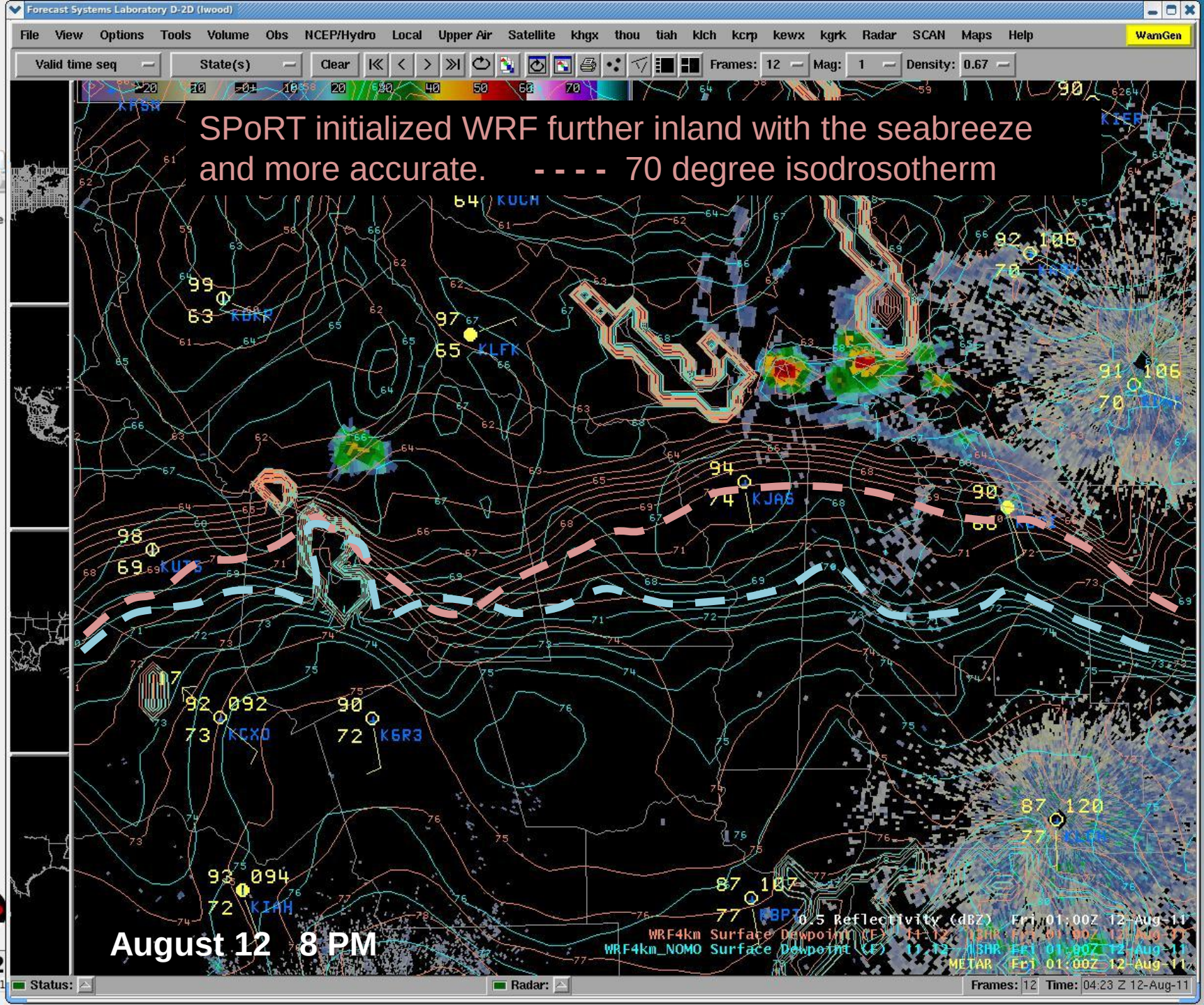
WFO Houston/Galveston Forecast Area

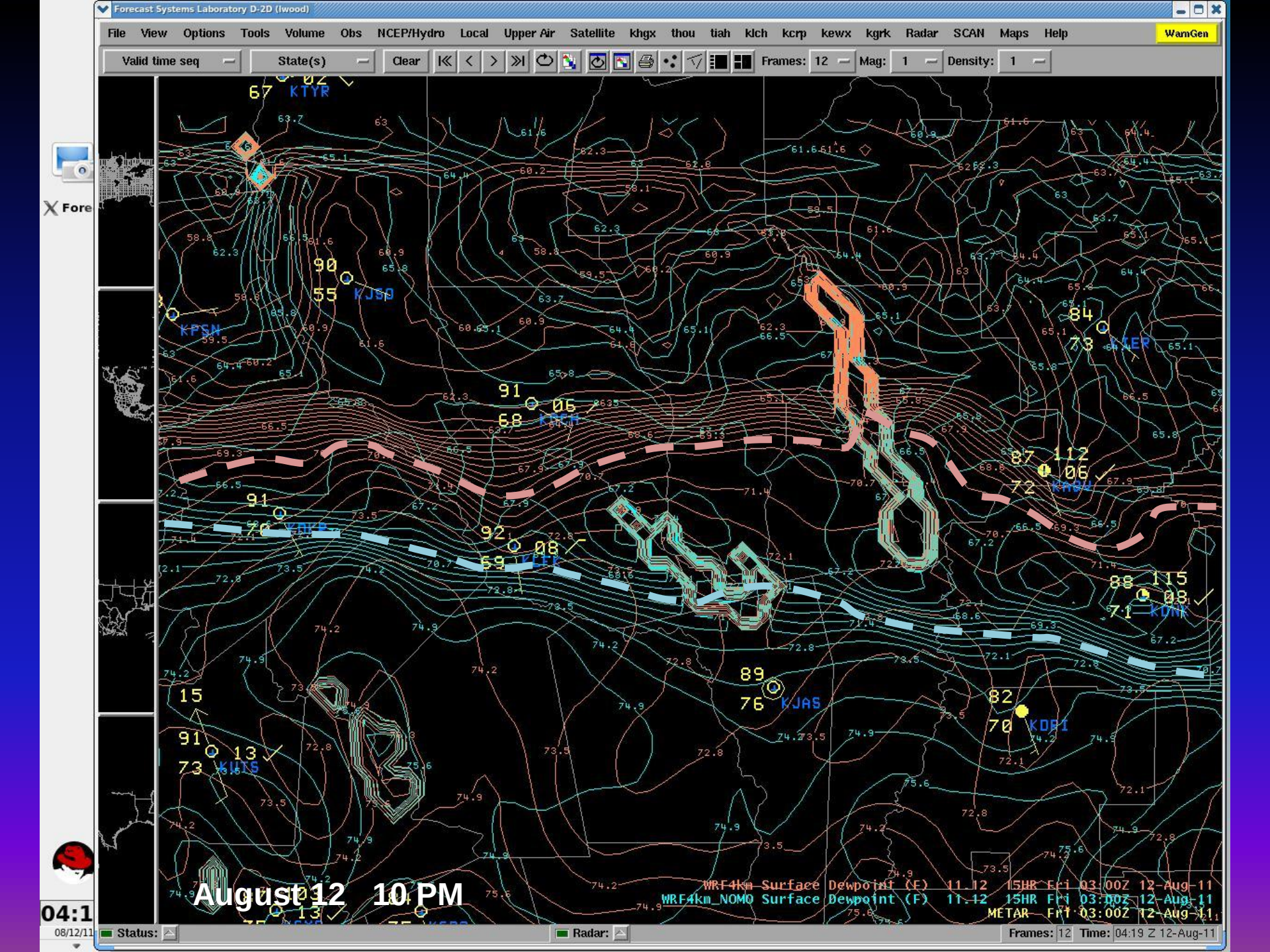
Most of Southeast Texas

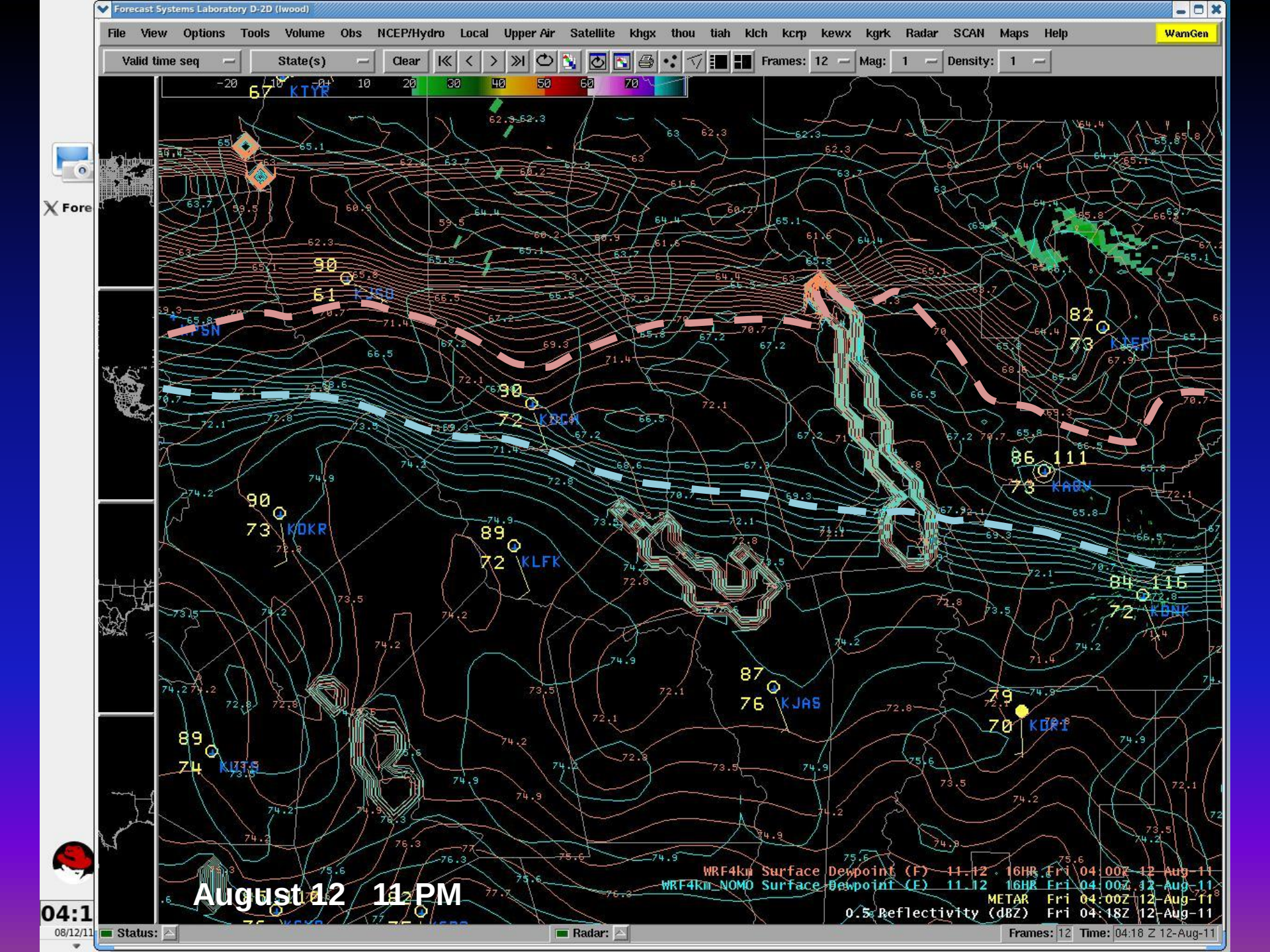


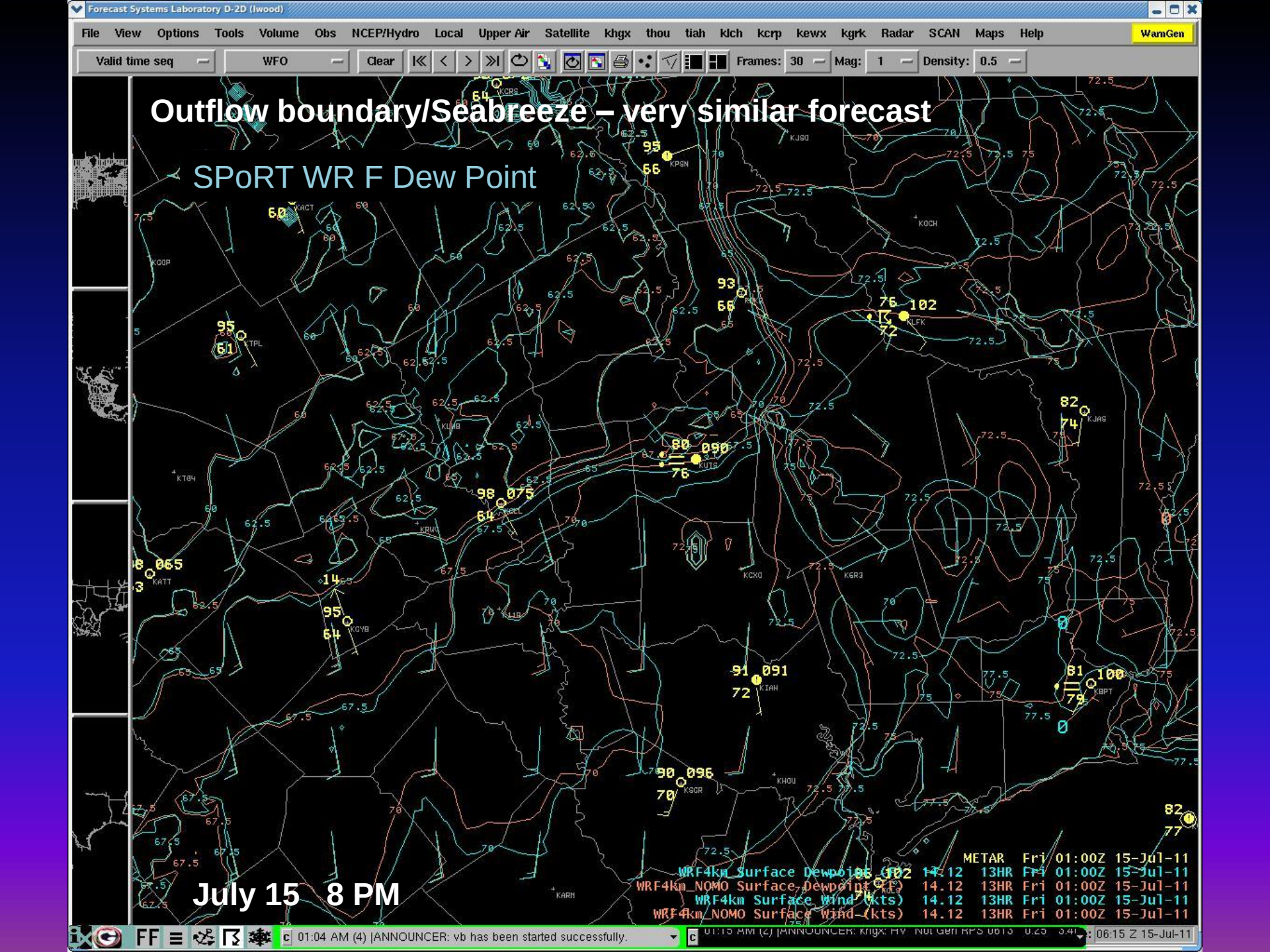
Seabreeze

- Orientation/timing similar across coastal zones.
- The SPoRT SST/LIS initialized WRF was at times slightly faster moving the boundary well inland, and appeared to be more accurate in these cases.
- Can have an affect on convection developing well inland in the vicinity of the northward advancing boundary.


Forecast Systems Laboratory D-2D (lwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WarnGen
Valid time seq
State(s)
Clear
Frames: 12
Mag: 1
Density: 0.67
SPoRT initialized WRF further inland with the seabreeze and more accurate. - - - - 70 degree isodrosotherm
August 12 8 PM
0.5 Reflectivity (dBZ) Fri 01:00Z 12-Aug-11
WRF4km Surface Dewpoint (F) Fri 01:00Z 12-Aug-11
WRF4km_NOMO Surface Dewpoint (F) Fri 01:00Z 12-Aug-11
METAR Fri 01:00Z 12-Aug-11
Status:
Radar:
Frames: 12 Time: 04:23 Z 12-Aug-11


Forecast Systems Laboratory D-2D (lwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WarnGen
Valid time seq
State(s)
Clear
Frames: 12
Mag: 1
Density: 1
August 12 10 PM
WRF4km Surface Dewpoint (F) 11.12 15HR Fri 03:00Z 12-Aug-11
WRF4km_NOMO Surface Dewpoint (F) 11.12 15HR Fri 03:00Z 12-Aug-11
METAR Fri 03:00Z 12-Aug-11
Status:
Radar:
Frames: 12 Time: 04:19 Z 12-Aug-11


Forecast Systems Laboratory D-2D (lwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WarnGen
Valid time seq
State(s)
Clear
Frames: 12
Mag: 1
Density: 1
-20 -10 -04 10 20 30 40 50 60 70
67 KTYR
90 61 KJSO
90 72 KDCN
90 73 KDKR
89 72 KLFK
87 76 KJAS
89 74 KUTS
82 73 KIER
86 111 73 KAOU
84 116 72 KBNK
79 70 KDRT
August 12 11 PM
WRF4km Surface Dewpoint (F) 11.12 16HR Fri 04:00Z 12-Aug-11
WRF4km_NOMO Surface Dewpoint (F) 11.12 16HR Fri 04:00Z 12-Aug-11
METAR Fri 04:00Z 12-Aug-11
0.5 Reflectivity (dBZ) Fri 04:18Z 12-Aug-11
Status:
Radar:
Frames: 12 Time: 04:18 Z 12-Aug-11
04:1
08/12/11


Forecast Systems Laboratory D-2D (lwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help WamGen
Valid time seq WFO Clear Frames: 30 Mag: 1 Density: 0.5
Outflow boundary/Seabreeze – very similar forecast
SPoRT WR F Dew Point
July 15 8 PM
METAR Fri 01:00Z 15-Jul-11
WRF4km Surface Dewpoint (F) 14.12 13HR Fri 01:00Z 15-Jul-11
WRF4Km_NOMO Surface Dewpoint (F) 14.12 13HR Fri 01:00Z 15-Jul-11
WRF4km Surface Wind (kts) 14.12 13HR Fri 01:00Z 15-Jul-11
WRF4km_NOMO Surface Wind (kts) 14.12 13HR Fri 01:00Z 15-Jul-11
01:04 AM (4) |ANNOUNCER: vb has been started successfully.
06:15 Z 15-Jul-11

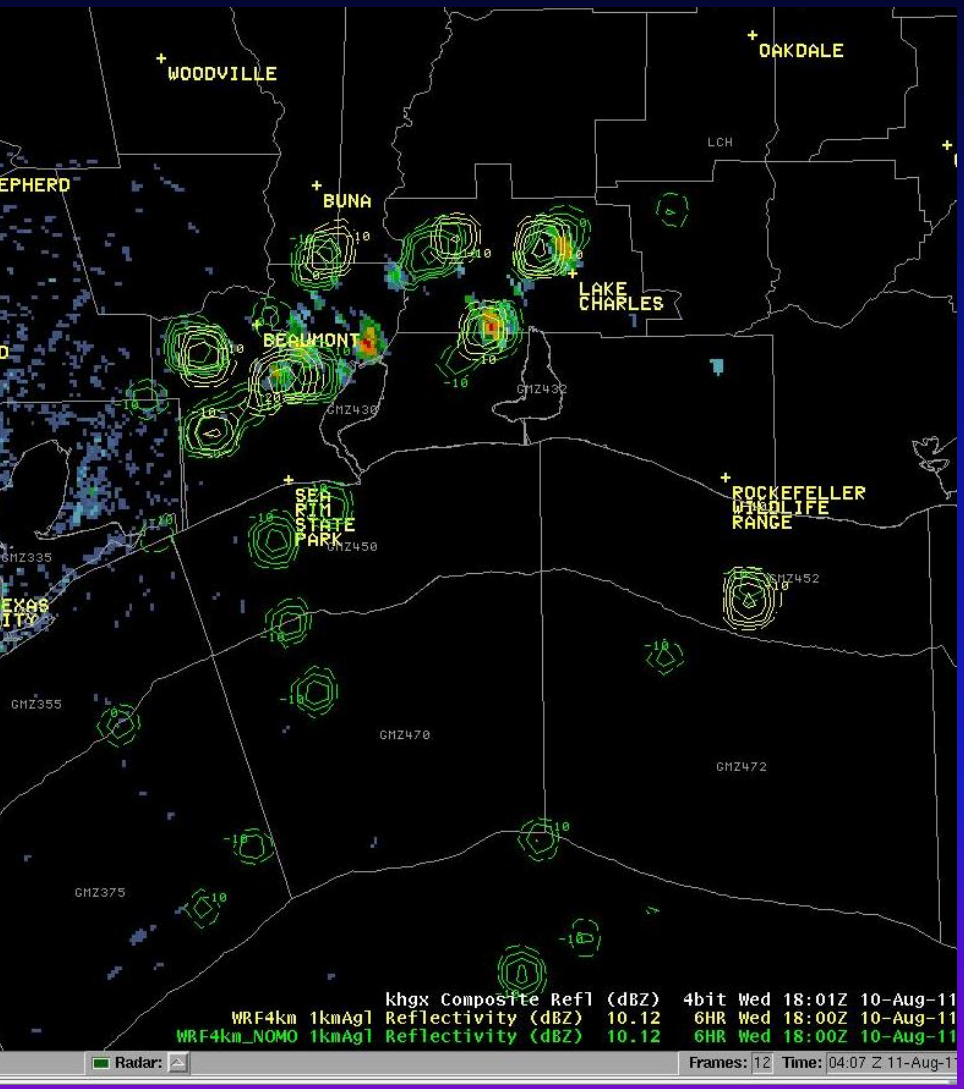
Convection

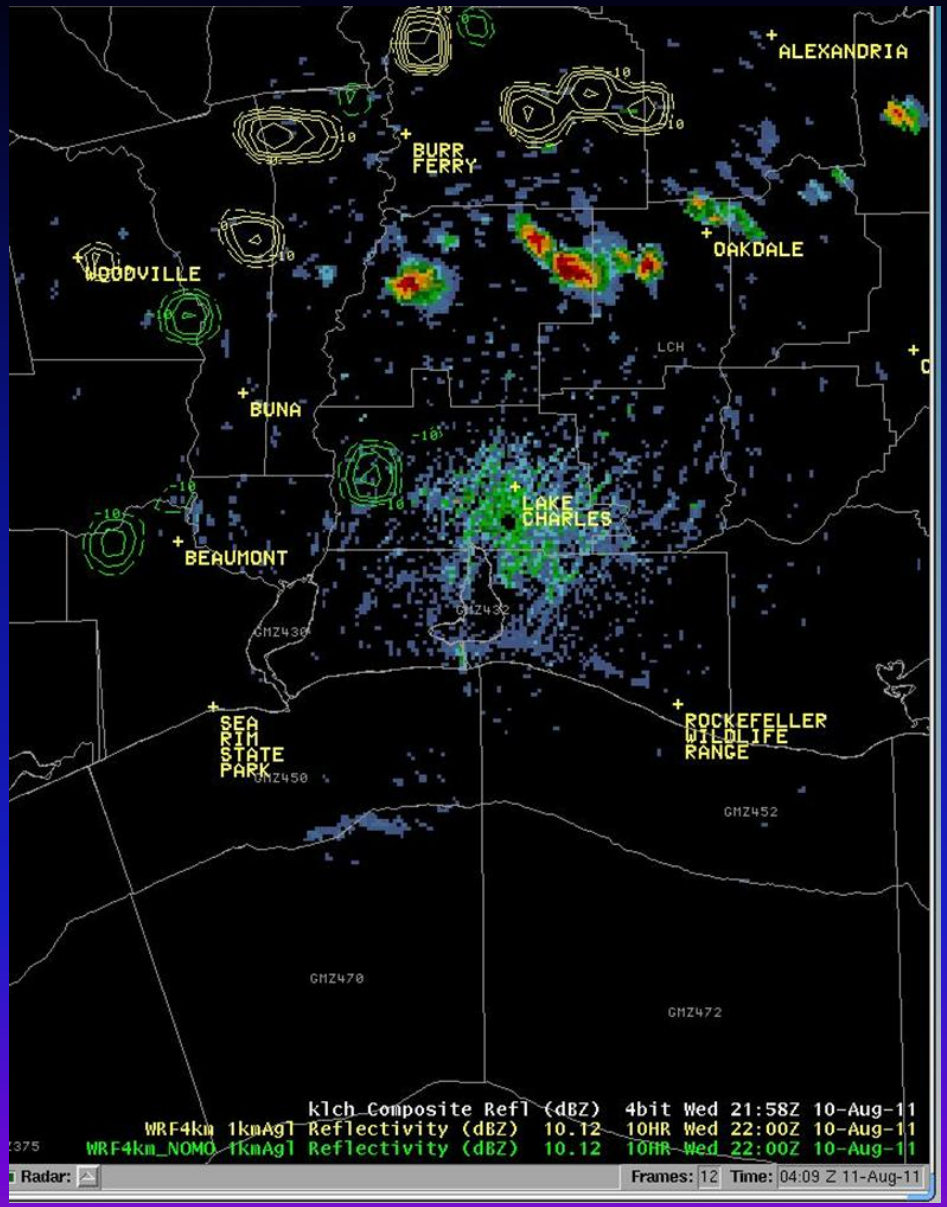
- In general, both versions of the WRF tended to over develop convection on non-active days, especially in west/southwest areas of SE Texas that were often strongly capped.
- Both versions had some timing issues, but in general, provide useful guidance to forecasters, particularly on the possible degree of coverage.
- The SPoRT SST/LIS initialized WRF reflectivity forecast was often better during convectively active afternoon/evenings.

Some convective examples….

SPoRT WRF reflectivity

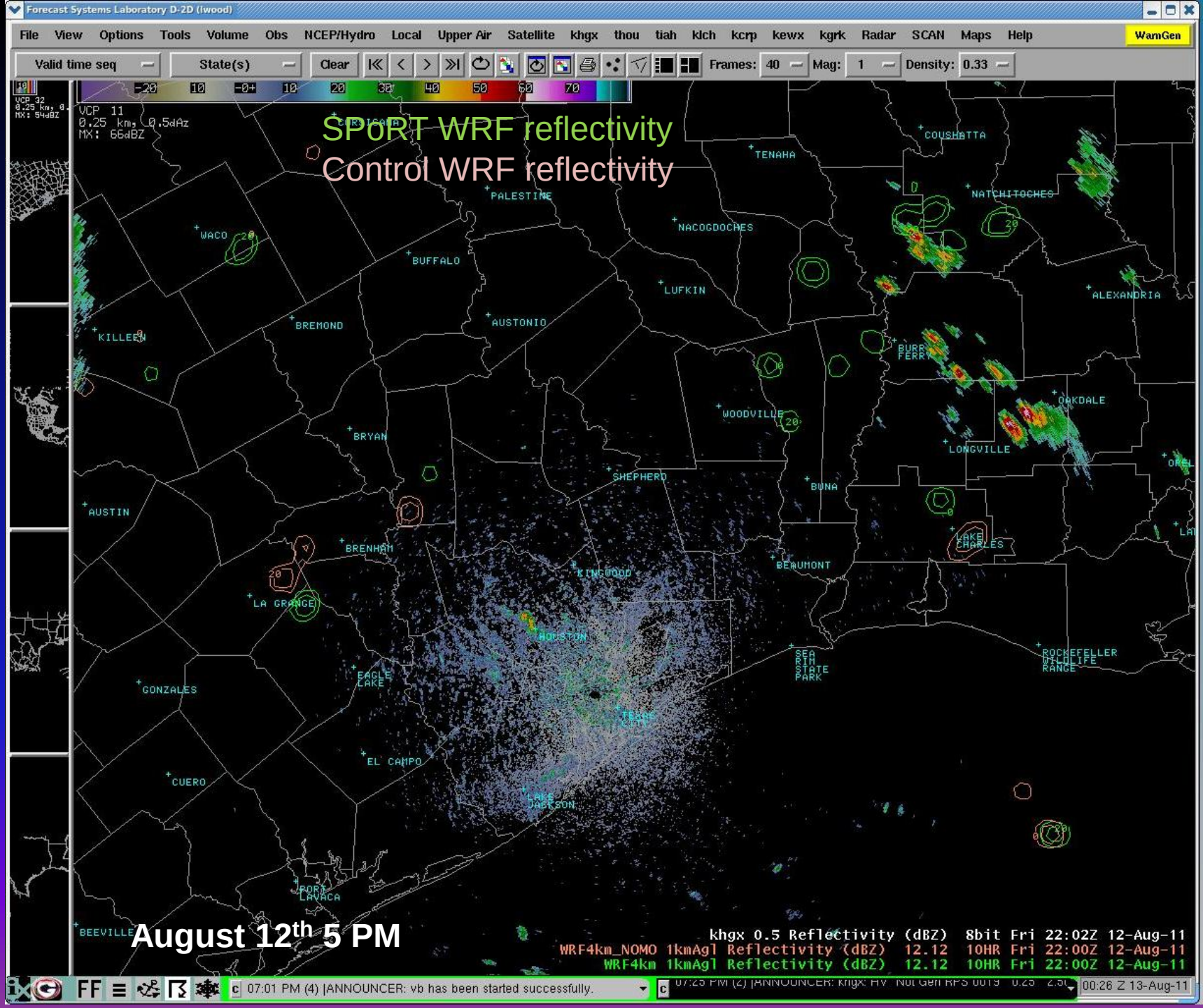
Control WRF reflectivity

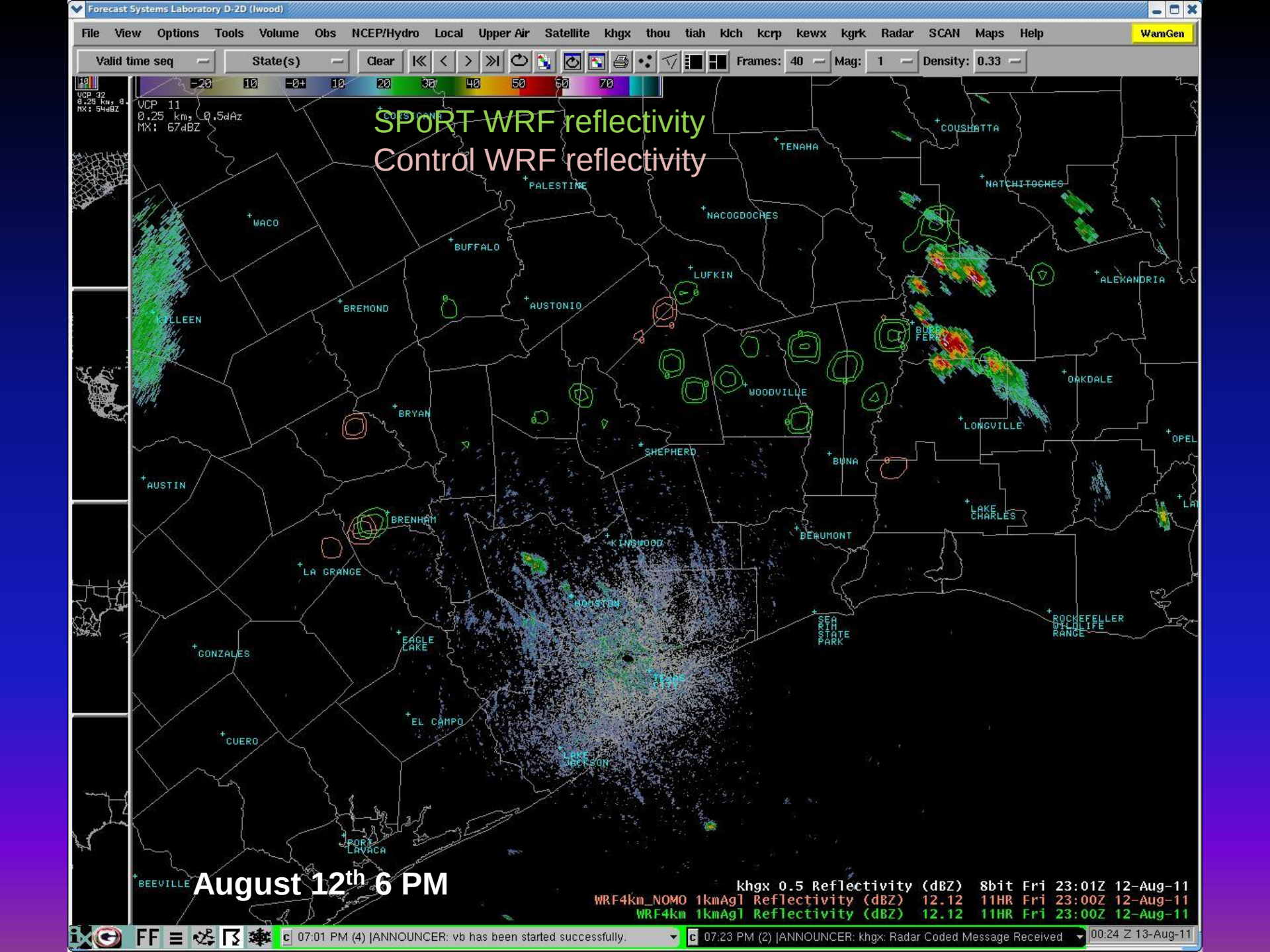


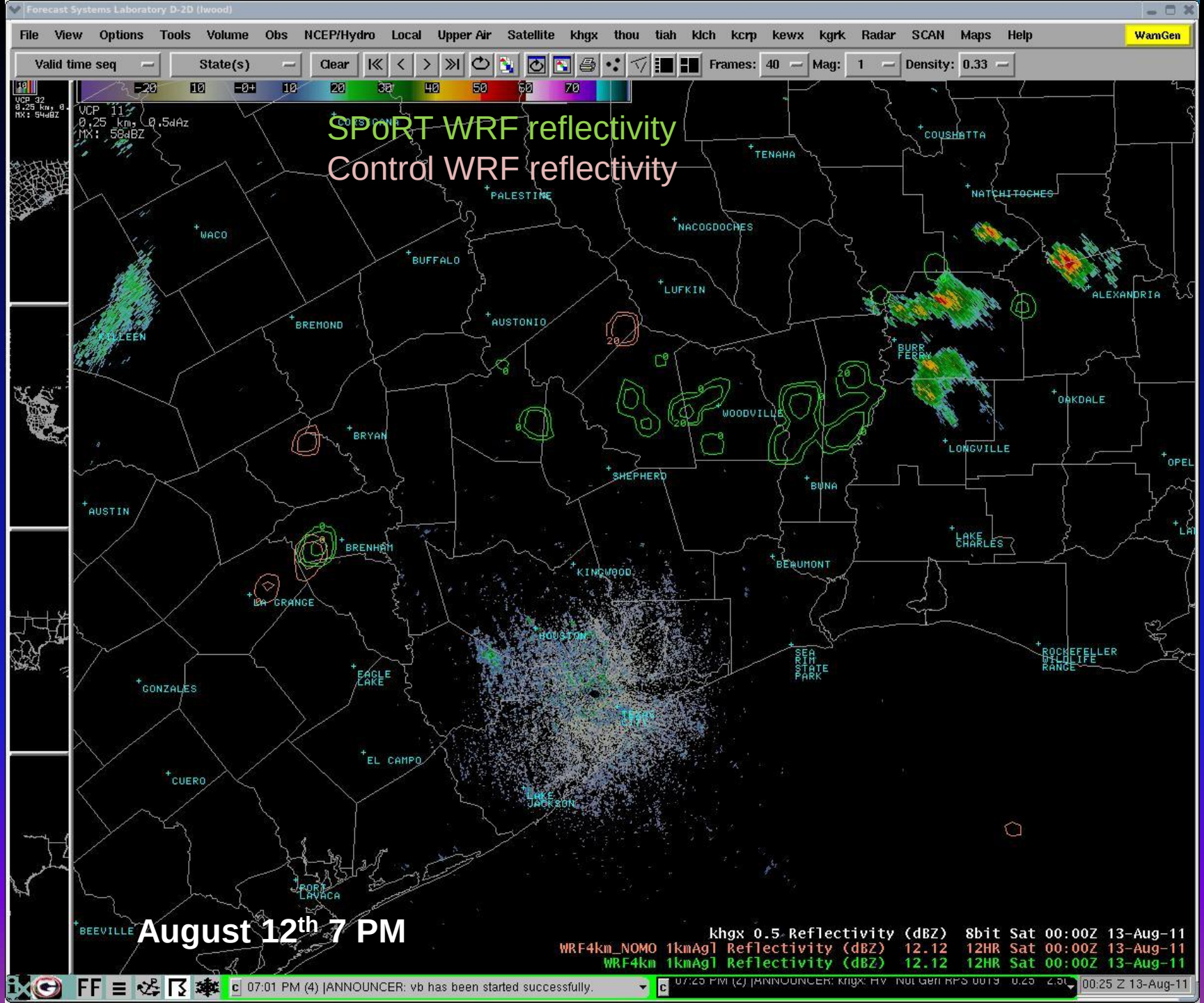


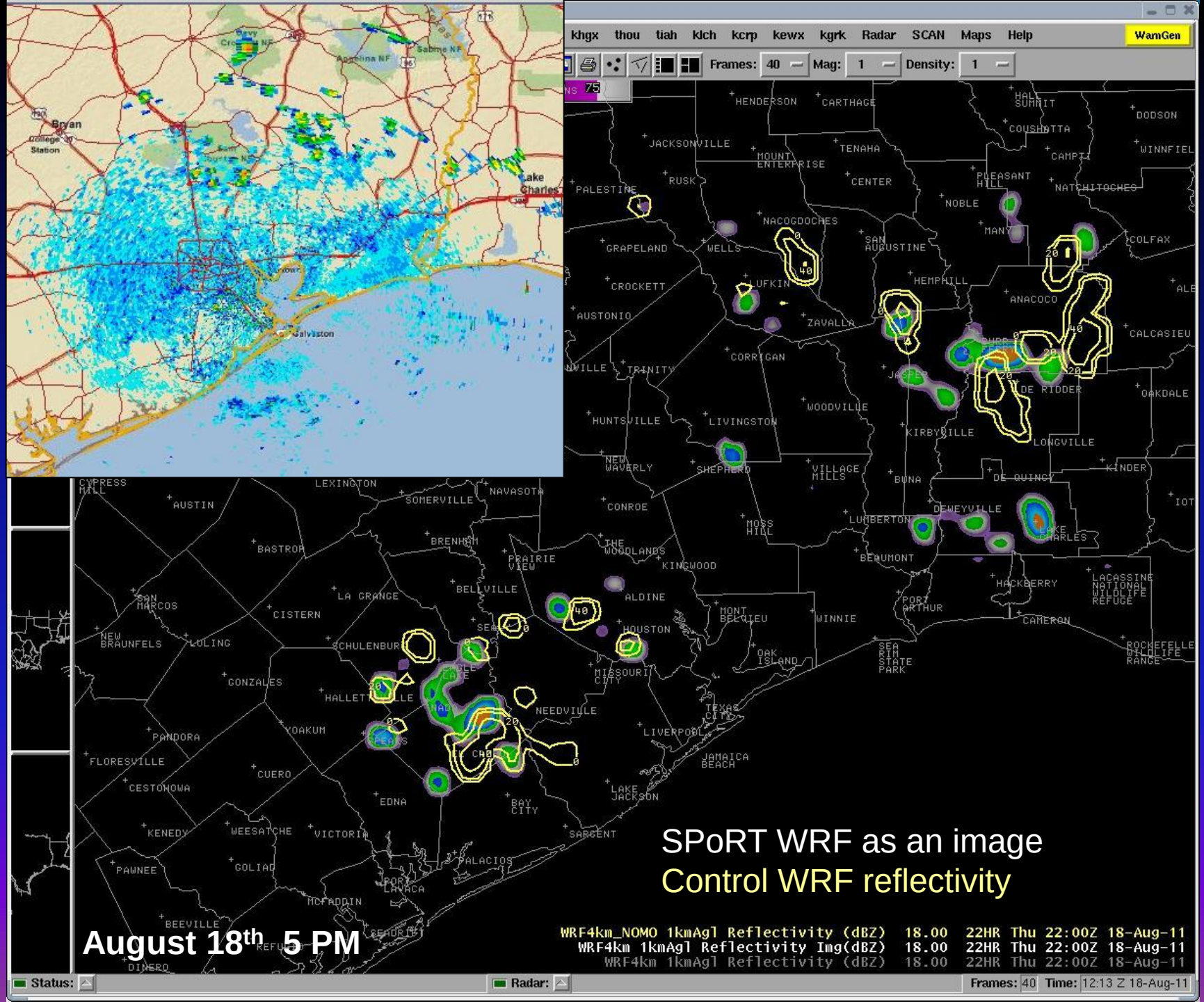
August 10th 1 PM

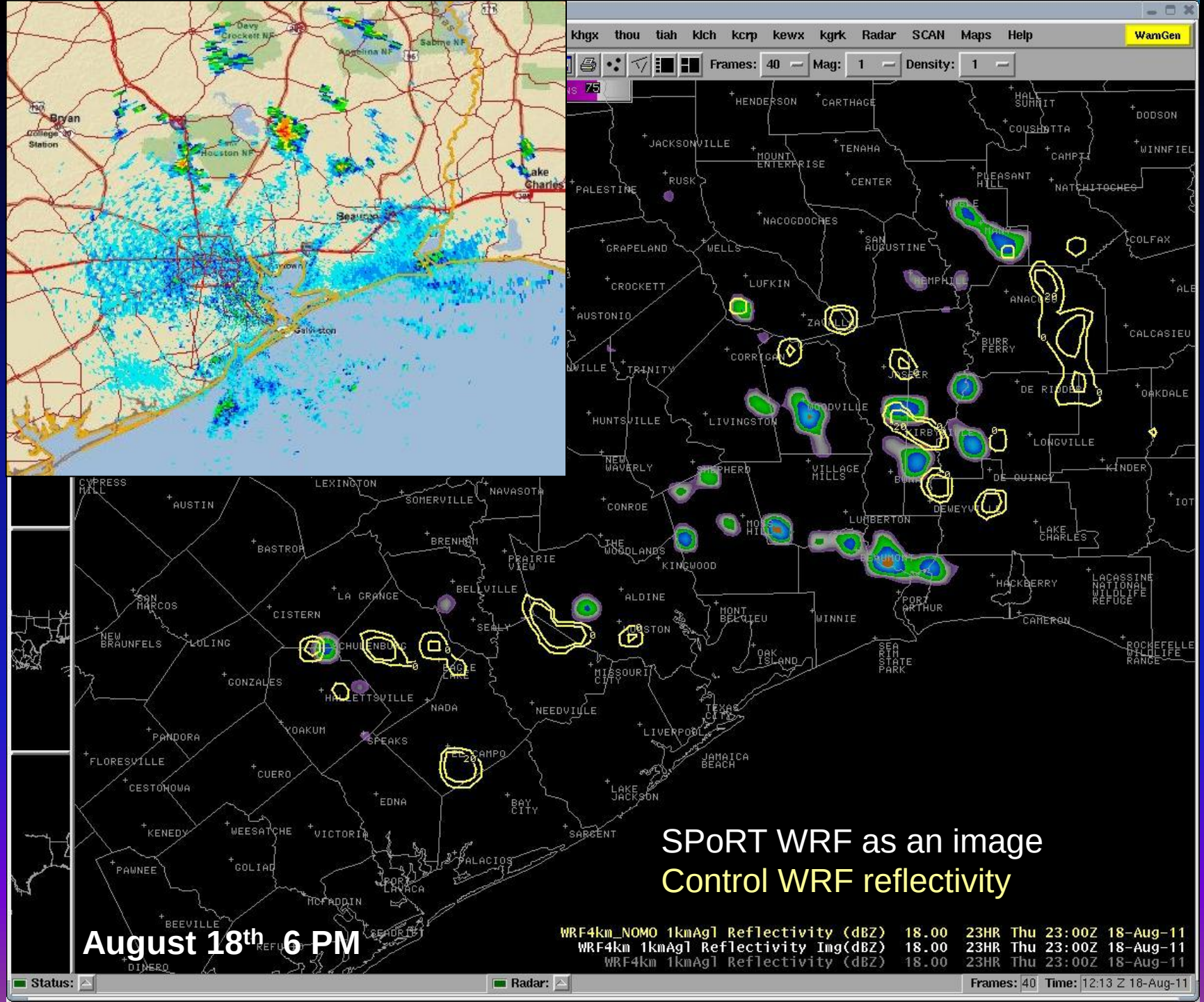
August 10th 5 PM

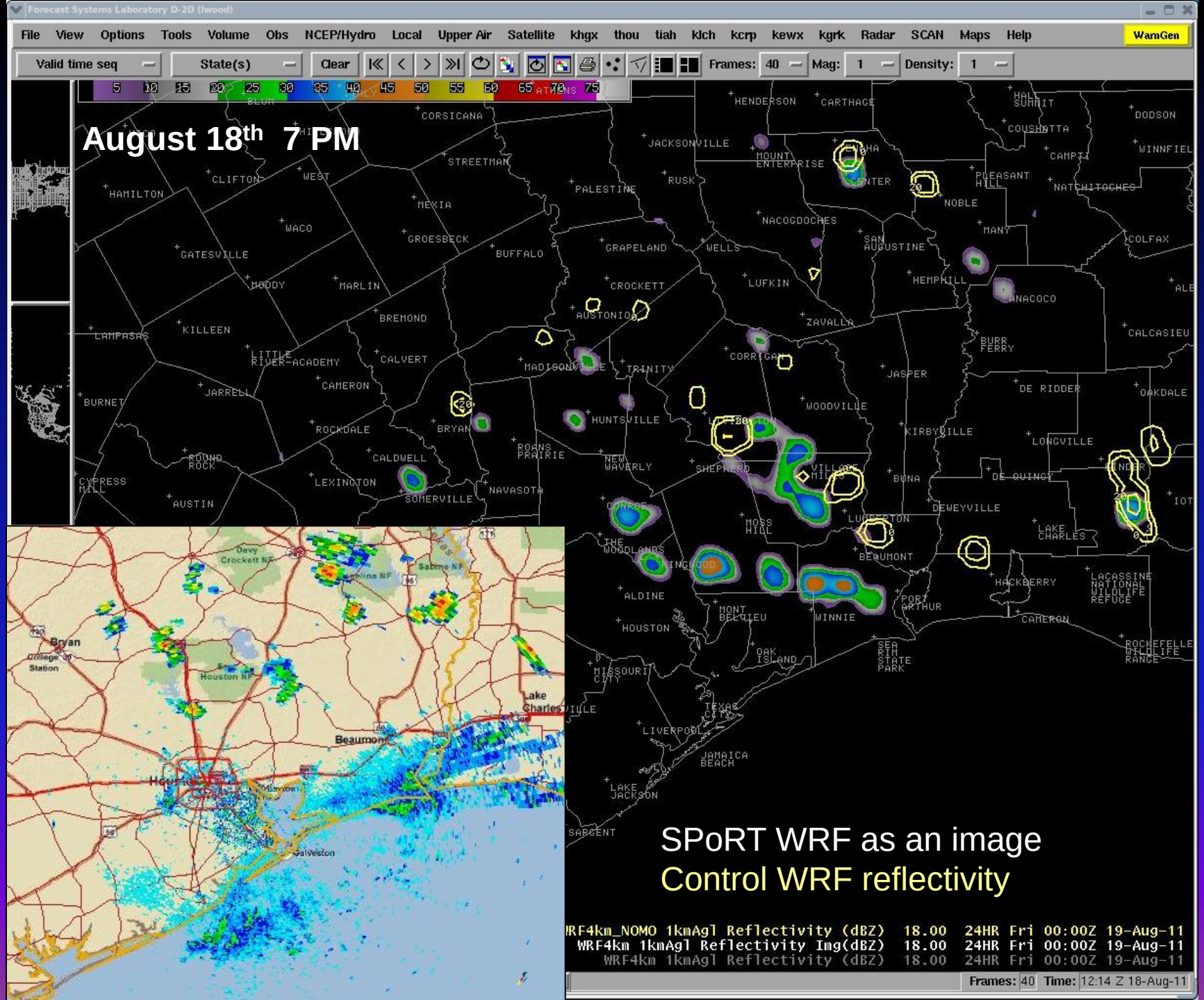

Forecast Systems Laboratory D-2D (lwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WamGen
Valid time seq
State(s)
Clear
Frames: 40
Mag: 1
Density: 0.33
VCP 11
0.25 km, 0.5dAz
MX: 66dBZ
SPoRT WRF reflectivity
Control WRF reflectivity
TENAHA
COUSHATTA
NATCHITOCHES
PALESTINE
NACOGDOCHES
WACO
BUFFALO
LUFKIN
ALEXANDRIA
KILLEEN
BREMOND
AUSTONIO
BURR FERRY
OAKDALE
WOODVILLE
BRYAN
LONGVILLE
SHEPHERD
BUNA
AUSTIN
BRENHAM
LAKE CHARLES
KINGWOOD
BEAUMONT
LA GRANGE
HOUSTON
SEA RIM STATE PARK
ROCKEFELLER WILDLIFE REFUGE
EAGLE LAKE
GONZALES
EL CAMPO
CUERO
LAKE JACKSON
PORT LAVACA
BEEVILLE
August 12th 5 PM
khgx 0.5 Reflectivity (dBZ) 8bit Fri 22:02Z 12-Aug-11
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 12.12 10HR Fri 22:00Z 12-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 12.12 10HR Fri 22:00Z 12-Aug-11
07:01 PM (4) |ANNOUNCER: vb has been started successfully.
00:26 Z 13-Aug-11


Forecast Systems Laboratory D-2D (lwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WamGen
Valid time seq
State(s)
Clear
Frames: 40
Mag: 1
Density: 0.33
VCP 11
0.25 km, 0.5dAz
MX: 67dBZ
SPoRT WRF reflectivity
Control WRF reflectivity
COUSHATTA
TENAHA
NATCHITOCHES
PALESTINE
NACOGDOCHES
WACO
BUFFALO
LUFKIN
ALEXANDRIA
KILLEEN
BREMOND
AUSTONIO
BURR FERRY
OAKDALE
WOODVILLE
BRYAN
LONGVILLE
OPEL
SHEPHERD
BUNA
AUSTIN
BRENHAM
LAKE CHARLES
BEAUMONT
KINGWOOD
LA GRANGE
HOUSTON
SEA RIM STATE PARK
ROCKEFELLER WILDLIFE REFUGE
EAGLE LAKE
GONZALES
TEXAS CITY
EL CAMPO
CUERO
LAKE JACKSON
PORT LAVACA
BEEVILLE
August 12th 6 PM
khgx 0.5 Reflectivity (dBZ) 8bit Fri 23:01Z 12-Aug-11
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 12.12 11HR Fri 23:00Z 12-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 12.12 11HR Fri 23:00Z 12-Aug-11
07:01 PM (4) |ANNOUNCER: vb has been started successfully.
07:23 PM (2) |ANNOUNCER: khgx: Radar Coded Message Received
00:24 Z 13-Aug-11

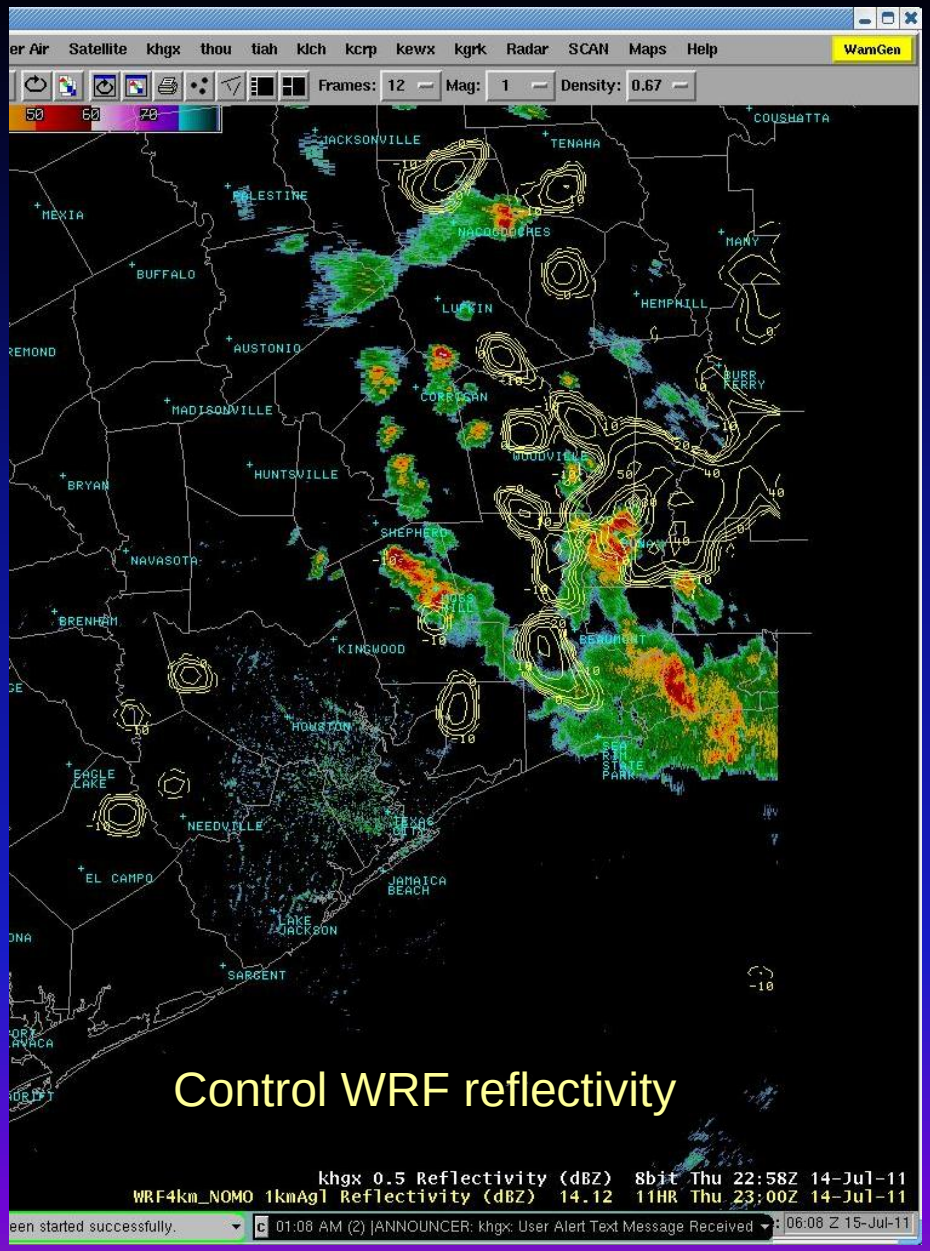

SPoRT WRF reflectivity
Control WRF reflectivity
August 12th 7 PM
khgx 0.5 Reflectivity (dBZ) 8bit Sat 00:00Z 13-Aug-11
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 12.12 12HR Sat 00:00Z 13-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 12.12 12HR Sat 00:00Z 13-Aug-11


khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WamGen
Frames: 40 Mag: 1 Density: 1
Bryan
College Station
Lake Charles
Galveston
HENDERSON
CARTHAGE
JACKSONVILLE
TENAHA
RUSK
PALESTINE
NACOGDOCHES
GRAPELAND
WELLS
LUFKIN
CROCKETT
AUSTONIO
ZAVALLA
CORRIGAN
TRINITY
HUNTSVILLE
LIVINGSTON
WOODVILLE
SHEPHERD
NEW WAVERLY
VILLAGE MILLS
KIRBYVILLE
DE RIDDER
LONGVILLE
BUNA
DE QUINCY
DEWEYVILLE
LUMBERTON
BEAUMONT
HACKBERRY
PORT ARTHUR
CAMERON
KINDER
OAKDALE
CALCASIEU
COLFAX
NATCHITOCHES
CAMPTI
WINNFIELD
DODSON
CYPRESS MILL
AUSTIN
LEXINGTON
SOMERVILLE
NAVASOTA
BASTROP
BRENHAM
CONROE
THE WOODLANDS
KINGWOOD
PRAIRIE VIEW
BELLVILLE
LA GRANGE
CISTERN
SAN MARCOS
NEW BRAUNFELS
LULING
SCHULENBURG
GONZALES
HALLETTSVILLE
YOAKUM
PANDORA
FLORESVILLE
CUERO
CESTOHOWA
EDNA
KENEDY
WEESATCHE
VICTORIA
PAWNEE
GOLIAD
PORT LAVACA
MCFADDIN
BEEVILLE
REFUGIO
ALDINE
HOUSTON
MISSOURI CITY
NEEDVILLE
LIVERPOOL
TEXAS CITY
JAMAICA BEACH
LAKE JACKSON
BAY CITY
SARGENT
PALACIOS
MONT BELVIEU
WINNIE
OAK ISLAND
SEA RIM STATE PARK
LACASSINE NATIONAL WILDLIFE REFUGE
ROCKEFELLE WILDLIFE RANGE
SPoRT WRF as an image
Control WRF reflectivity
August 18th 5 PM
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 18.00 22HR Thu 22:00Z 18-Aug-11
WRF4km 1kmAgl Reflectivity Img(dBZ) 18.00 22HR Thu 22:00Z 18-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 18.00 22HR Thu 22:00Z 18-Aug-11
Status:
Radar:
Frames: 40 Time: 12:13 Z 18-Aug-11

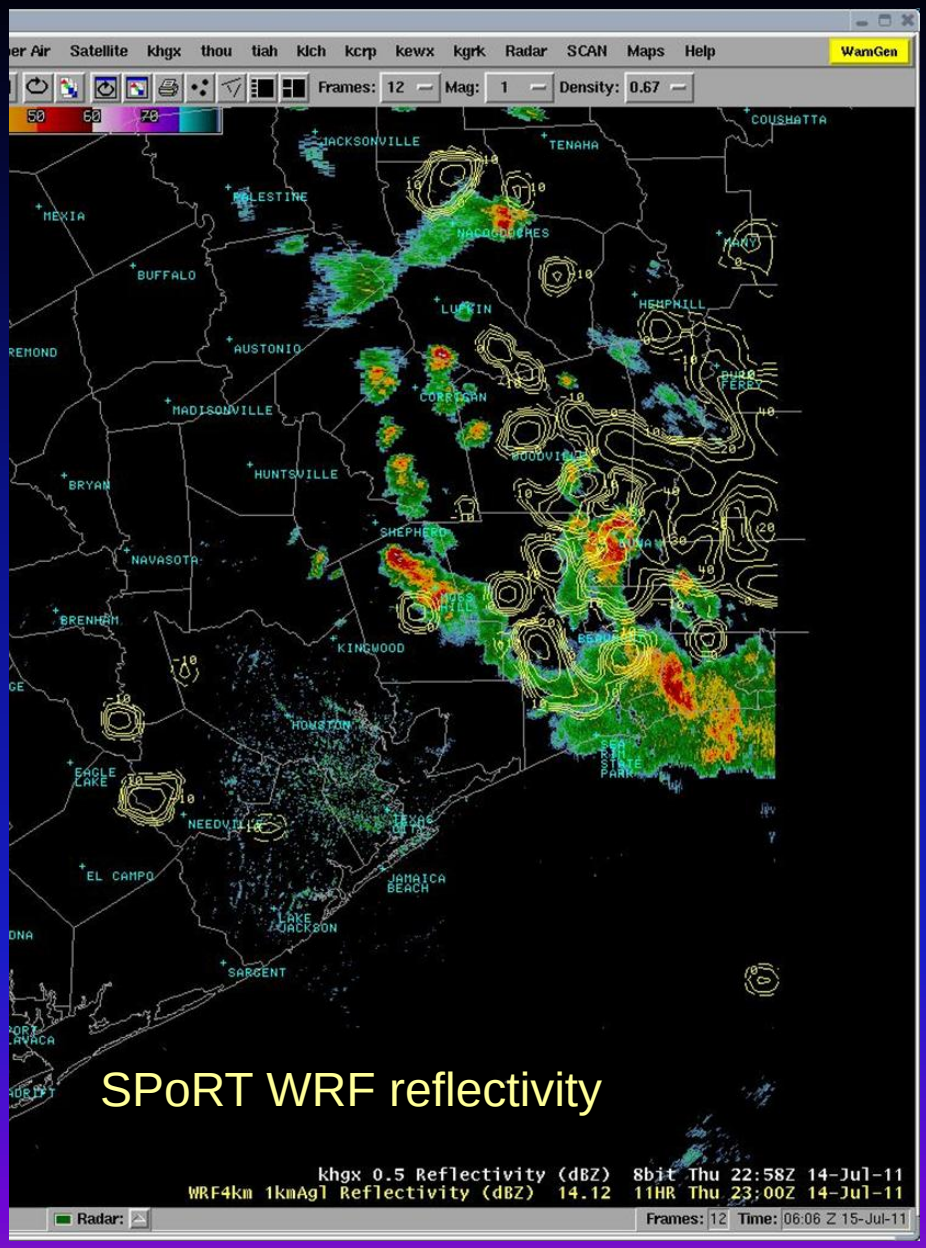

khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WamGen
Frames: 40 Mag: 1 Density: 1
SPoRT WRF as an image
Control WRF reflectivity
August 18th 6 PM
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 18.00 23HR Thu 23:00Z 18-Aug-11
WRF4km 1kmAgl Reflectivity Img(dBZ) 18.00 23HR Thu 23:00Z 18-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 18.00 23HR Thu 23:00Z 18-Aug-11
Status:
Radar:
Frames: 40 Time: 12:13 Z 18-Aug-11


Forecast Systems Laboratory D-2D (lwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WamGen
Valid time seq
State(s)
Clear
Frames: 40
Mag: 1
Density: 1
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
August 18th 7 PM
SPoRT WRF as an image
Control WRF reflectivity
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 18.00 24HR Fri 00:00Z 19-Aug-11
WRF4km 1kmAgl Reflectivity Img(dBZ) 18.00 24HR Fri 00:00Z 19-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 18.00 24HR Fri 00:00Z 19-Aug-11
Frames: 40 Time: 12:14 Z 18-Aug-11

July 14th 2011 6 PM

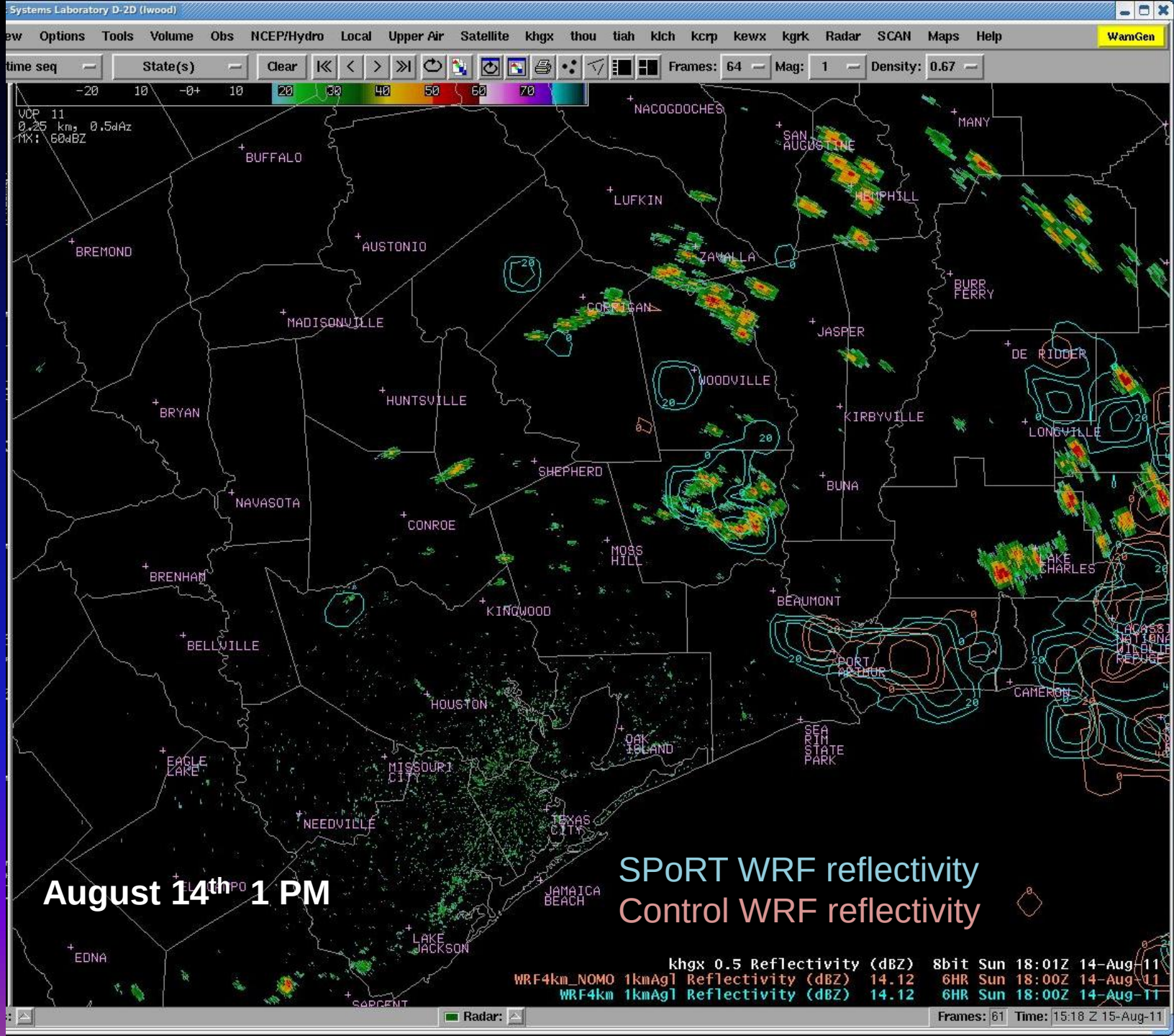


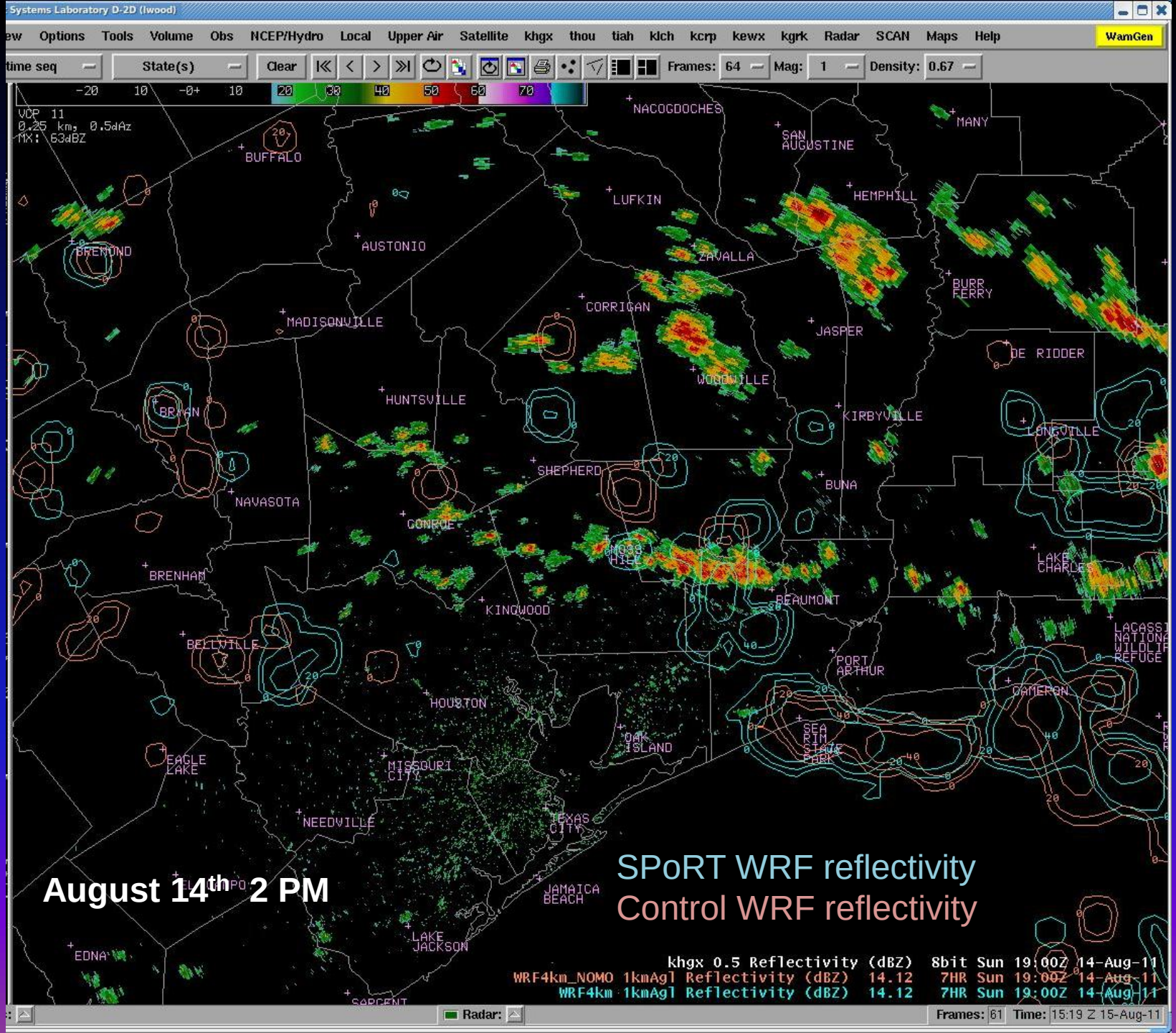
Control WRF reflectivity

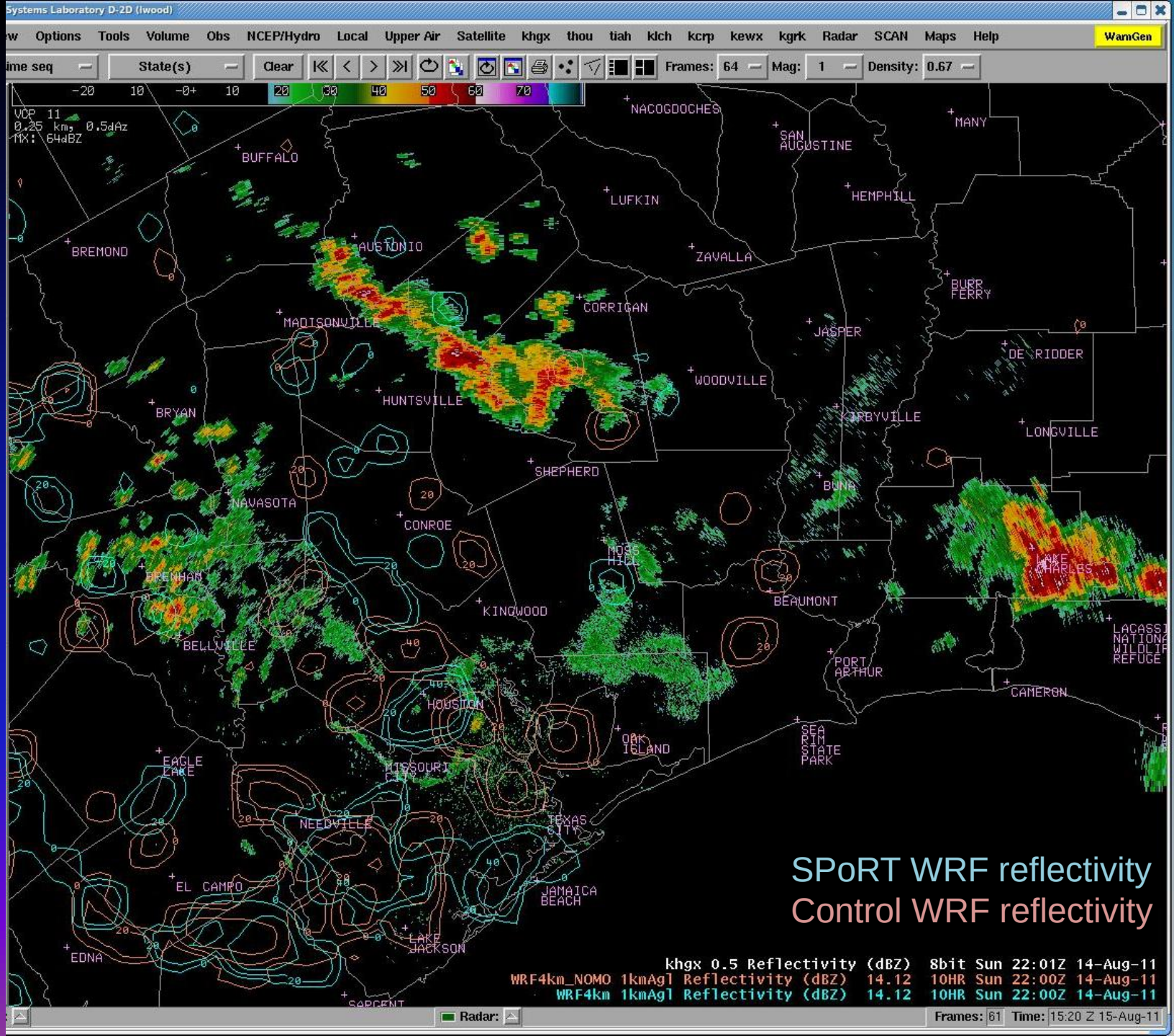


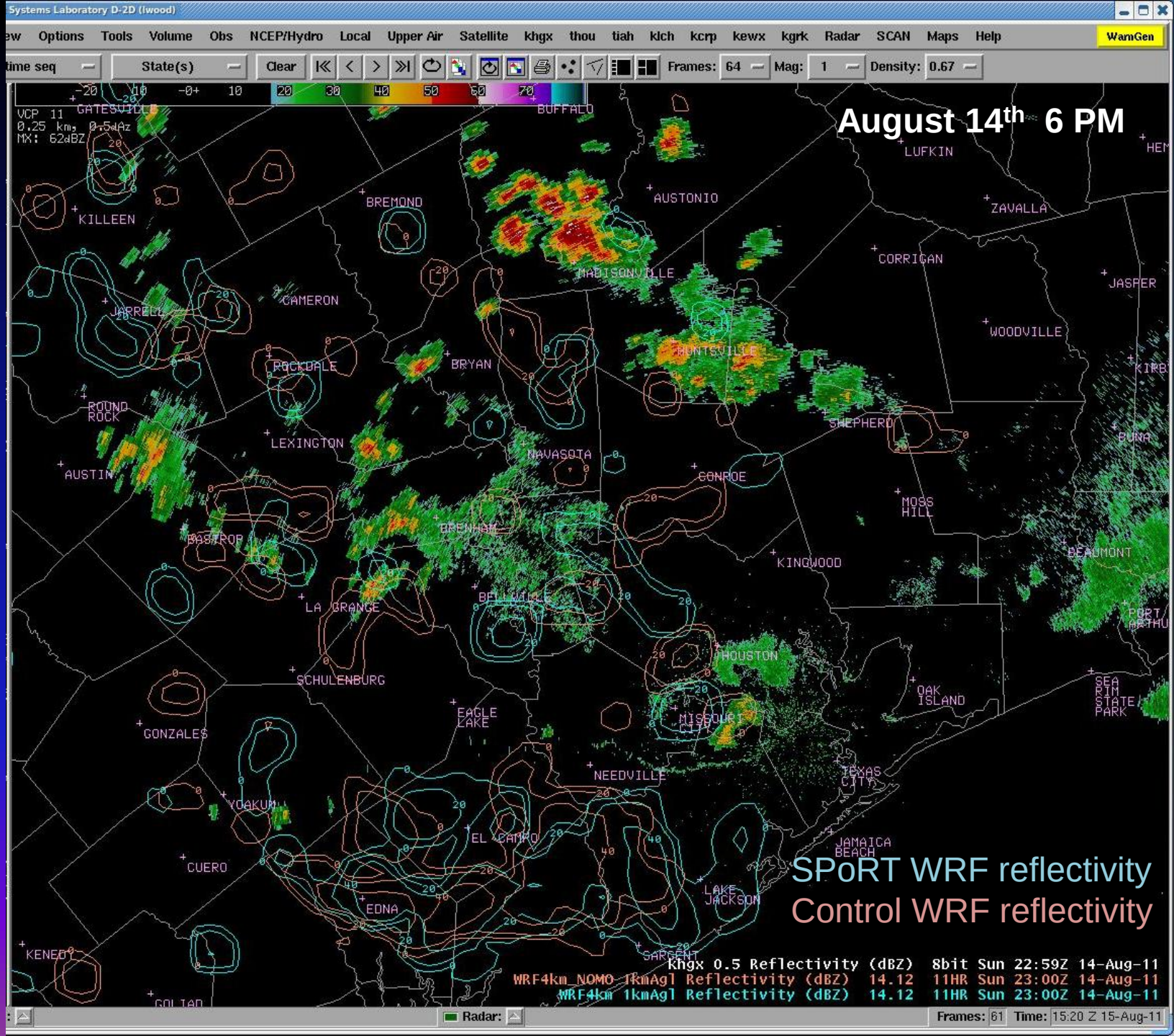
SPoRT WRF reflectivity

Both versions provide useful guidance to forecaster, just a little slow with the broken line of thunderstorms moving southwest.


Systems Laboratory D-2D (lwood)
Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WarnGen
time seq
State(s)
Clear
Frames: 64
Mag: 1
Density: 0.67
-20 10 -0+ 10 20 30 40 50 60 70
VCP 11
0.25 km, 0.5dAz
MX: 60dBZ
NACOGDOCHES
SAN AUGUSTINE
MANY
BUFFALO
LUFKIN
HEMPHILL
BREMOND
AUSTONIO
ZAVALLA
BURR FERRY
CORRIGAN
MADISONVILLE
JASPER
DE RIDDER
WOODVILLE
HUNTSVILLE
BRYAN
KIRBYVILLE
LONGVILLE
SHEPHERD
BUNA
NAVASOTA
CONROE
MOSS HILL
LAKE CHARLES
BRENHAM
BEAUMONT
KINGWOOD
BELLVILLE
PORT ARTHUR
CAMERON
HOUSTON
SEA RIM STATE PARK
OAK ISLAND
EAGLE LAKE
MISSOURI CITY
NEEDVILLE
TEXAS CITY
JAMAICA BEACH
LAKE JACKSON
EDNA
SARGENT
August 14th 1 PM
SPoRT WRF reflectivity
Control WRF reflectivity
khgx 0.5 Reflectivity (dBZ) 8bit Sun 18:01Z 14-Aug-11
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 14.12 6HR Sun 18:00Z 14-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 14.12 6HR Sun 18:00Z 14-Aug-11
Radar:
Frames: 61 Time: 15:18 Z 15-Aug-11


Systems Laboratory D-2D (lwood)
ew Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WamGen
time seq
State(s)
Clear
Frames: 64
Mag: 1
Density: 0.67
-20 10 -0+ 10 20 30 40 50 60 70
VCP 11
0.25 km, 0.5dAz
MX: 53dBZ
BUFFALO
BRENHAM
AUSTONIO
MADISONVILLE
NACOGDOCHES
SAN AUGUSTINE
MANY
LUFKIN
HEMPHILL
ZAVALLA
BURR FERRY
CORRIGAN
JASPER
DE RIDDER
WOODVILLE
HUNTSVILLE
BRYAN
KIRBYVILLE
LONGVILLE
SHEPHERD
BUNA
NAVASOTA
CONROE
BRENHAM
KINGWOOD
BEAUMONT
LAKE CHARLES
BELLVILLE
PORT ARTHUR
CAMERON
HOUSTON
OAK ISLAND
EAGLE LAKE
MISSOURI CITY
NEEDVILLE
TEXAS CITY
JAMAICA BEACH
LAKE JACKSON
EDNA
August 14th 2 PM
SPoRT WRF reflectivity
Control WRF reflectivity
khgx 0.5 Reflectivity (dBZ) 8bit Sun 19:00Z 14-Aug-11
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 14.12 7HR Sun 19:00Z 14-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 14.12 7HR Sun 19:00Z 14-Aug-11
Radar:
Frames: 61 Time: 15:19 Z 15-Aug-11


Systems Laboratory D-2D (lwood)
Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WarnGen
State(s) Clear Frames: 64 Mag: 1 Density: 0.67
-20 10 -0+ 10 20 30 40 50 60 70
VCP 11
0.25 km, 0.5dAz
MX: 64dBZ
BUFFALO
BREMOND
AUSTONIO
MADISONVILLE
BRYAN
HUNTSVILLE
NACOGDOCHES
SAN AUGUSTINE
LUFKIN
ZAVALLA
HEMPHILL
MANY
BURR FERRY
CORRIGAN
JASPER
DE RIDDER
WOODVILLE
KIRBYVILLE
LONGVILLE
SHEPHERD
BUNA
NAVASOTA
CONROE
MOSS HILL
BREMHAM
KINGWOOD
BEAUMONT
LAKE CHARLES
BELLVILLE
PORT ARTHUR
CAMERON
HOUSTON
OAK ISLAND
SEA RIM STATE PARK
EAGLE LAKE
NEEDVILLE
TEXAS CITY
EL CAMPO
JAMAICA BEACH
LAKE JACKSON
EDNA
SARGENT
SPoRT WRF reflectivity
Control WRF reflectivity
khgx 0.5 Reflectivity (dBZ) 8bit Sun 22:01Z 14-Aug-11
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 14.12 10HR Sun 22:00Z 14-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 14.12 10HR Sun 22:00Z 14-Aug-11
Radar:
Frames: 61 Time: 15:20 Z 15-Aug-11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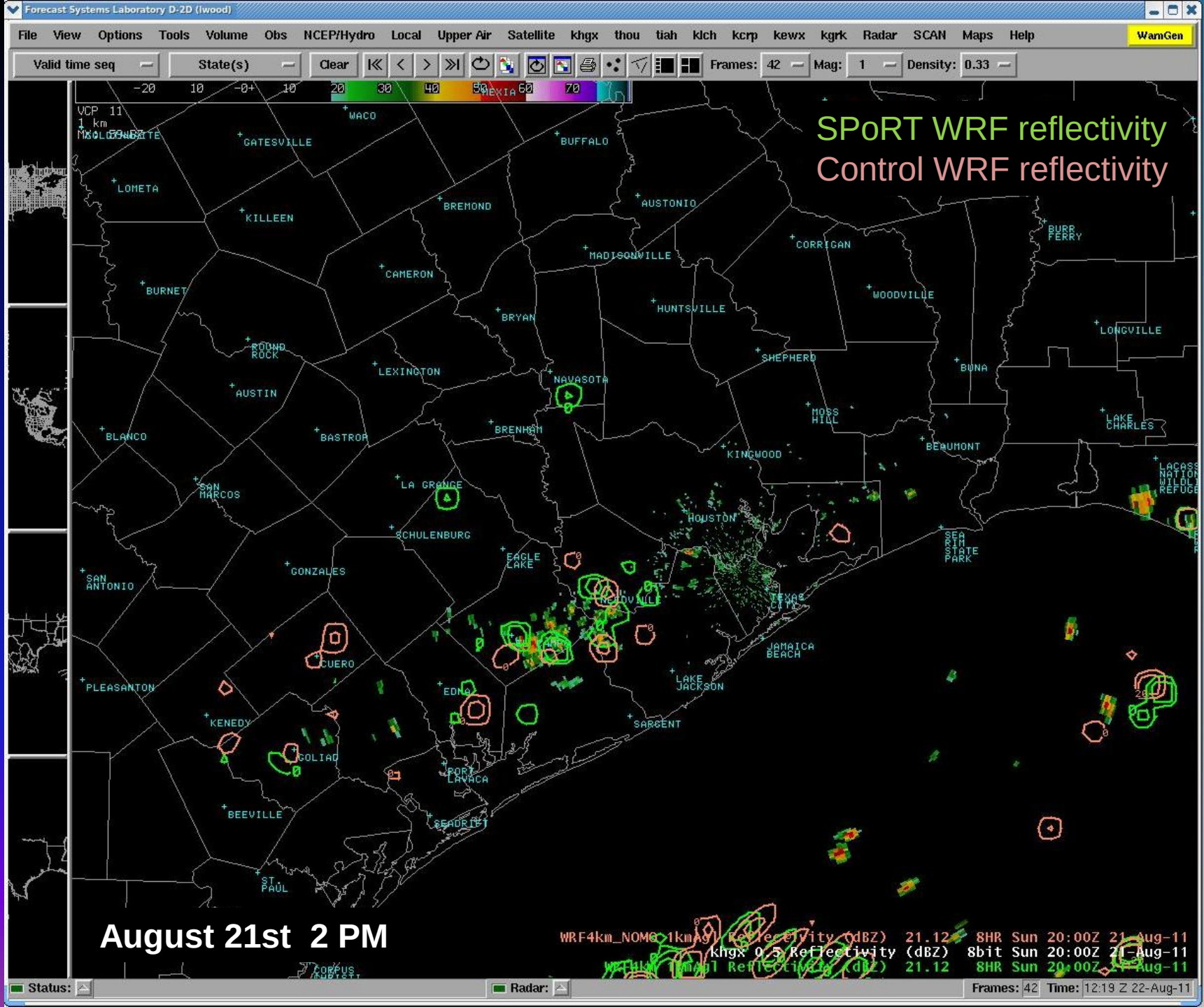
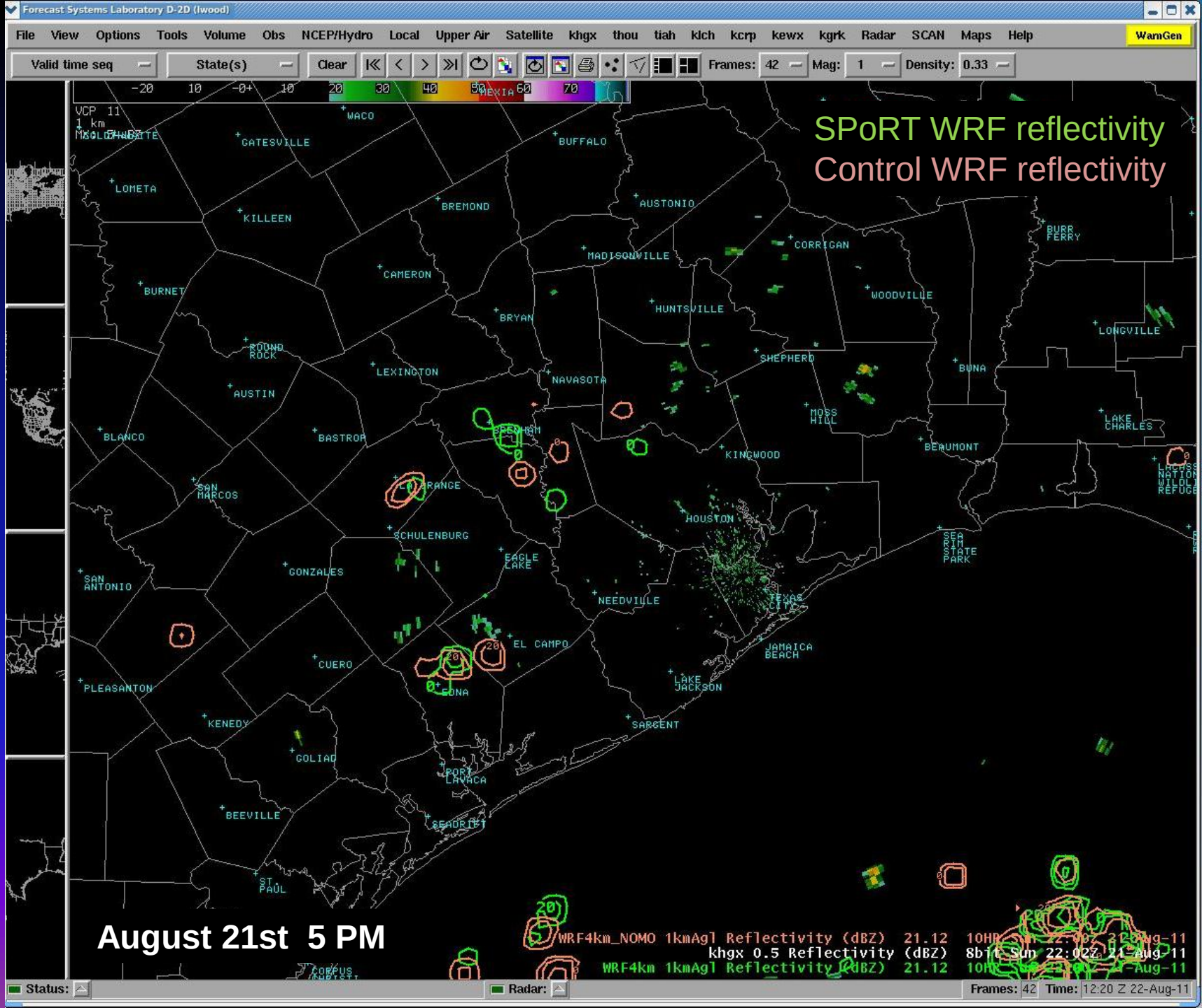
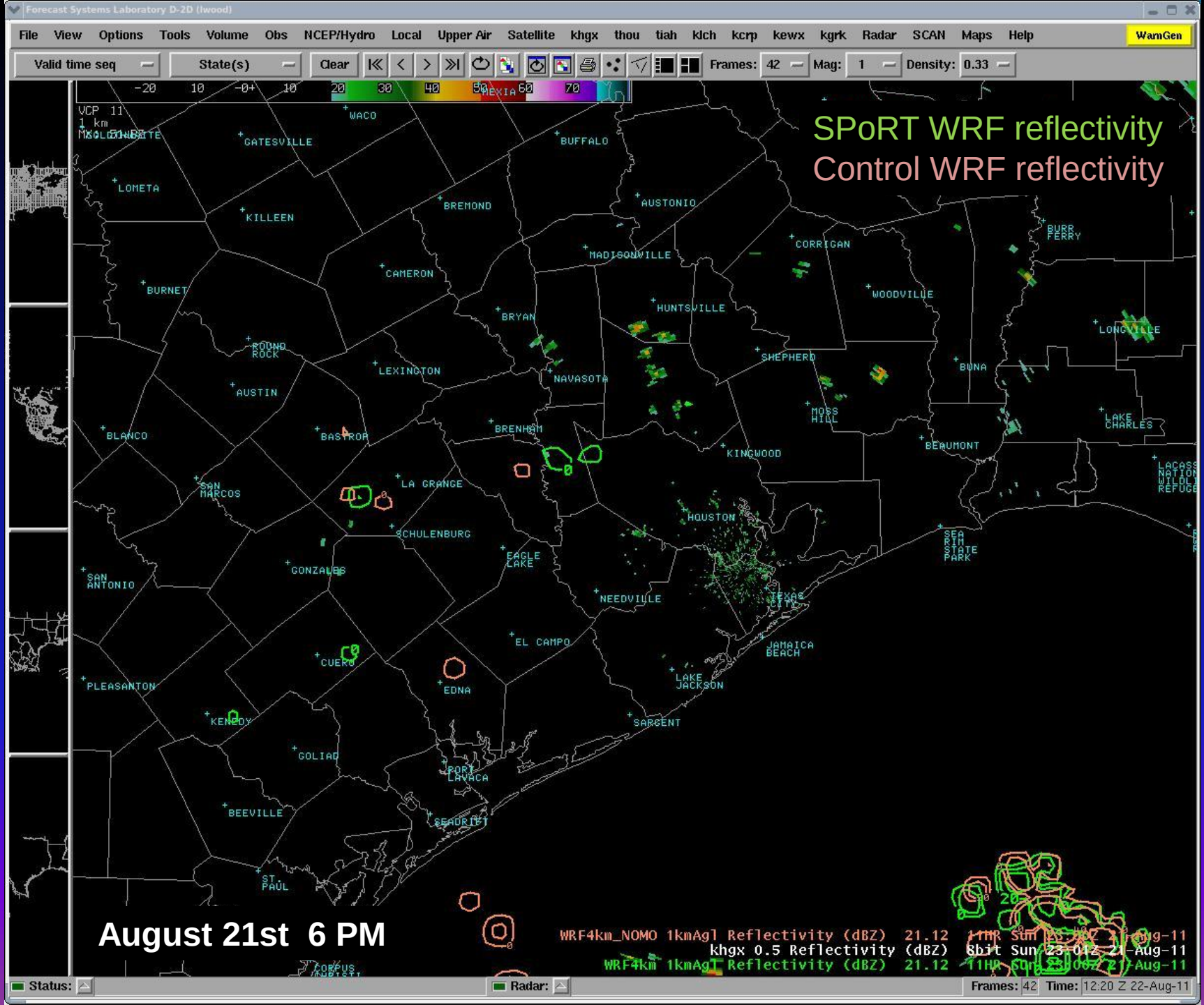
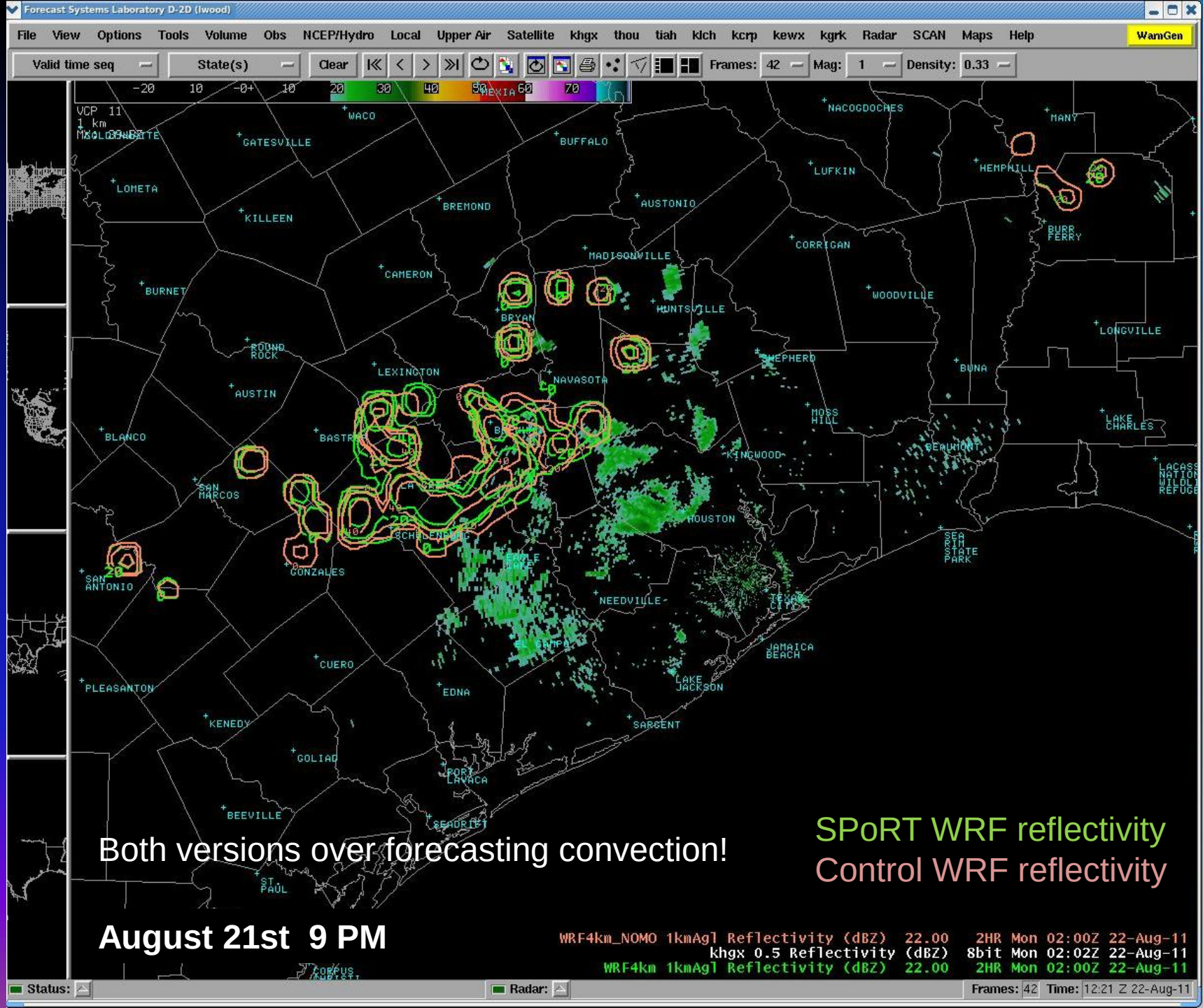
time seq
State(s)
Clear
Frames: 64
Mag: 1
Density: 0.67
VCP 11
0.25 km, 0.5dAz
MX: 62dBZ
August 14th 6 PM
KILLEEN
BREMOND
AUSTONIO
LUFKIN
ZAVALLA
CORRIGAN
JASPER
WOODVILLE
MADISONVILLE
HUNTSVILLE
CAMERON
JARRELL
ROCKDALE
BRYAN
ROUND ROCK
LEXINGTON
AUSTIN
NAVASOTA
SHEPHERD
BUNA
GONROE
MOSS HILL
BASTROP
BRENHAM
KINGWOOD
BEAUMONT
LA GRANGE
BELLVILLE
HOUSTON
OAK ISLAND
SCHULENBURG
EAGLE LAKE
GONZALES
NEEDVILLE
TEXAS CITY
YOAKUM
EL CAMPO
JAMAICA BEACH
CUERO
EDNA
LAKE JACKSON
SARGENT
KENEDY
GOLIAD
SPoRT WRF reflectivity
Control WRF reflectivity
khgx 0.5 Reflectivity (dBZ) 8bit Sun 22:59Z 14-Aug-11
WRF4km_NOMO_1kmAgl Reflectivity (dBZ) 14.12 11HR Sun 23:00Z 14-Aug-11
WRF4km_1kmAgl Reflectivity (dBZ) 14.12 11HR Sun 23:00Z 14-Aug-11
Radar:
Frames: 61
Time: 15:20 Z 15-Aug-11

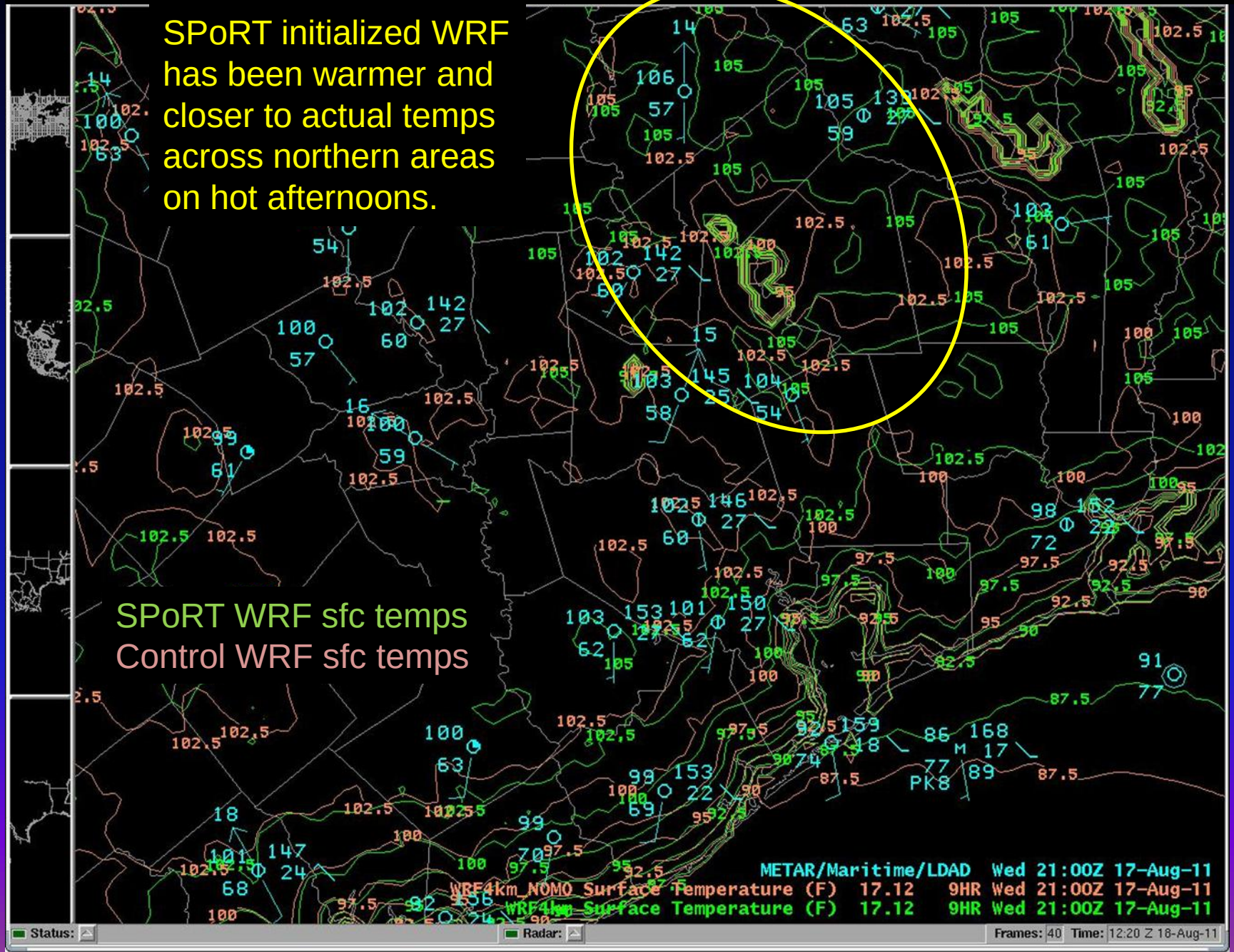

Forecast Systems Laboratory D-2D (Iwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WamGen
Valid time seq
State(s)
Clear
Frames: 42
Mag: 1
Density: 0.33
-20 10 -0+ 10 20 30 40 50 60 70
VCP 11
1 km
WACO
GATESVILLE
BUFFALO
LOMETA
KILLEEN
BREMOND
AUSTONIO
CORRIGAN
BURR FERRY
MADISONVILLE
CAMERON
BURNET
HUNTSVILLE
WOODVILLE
BRYAN
LONGVILLE
ROUND ROCK
LEXINGTON
SHEPHERD
BUNA
AUSTIN
NAVASOTA
MOSS HILL
LAKE CHARLES
BLANCO
BASTROP
BRENHAM
BEAUMONT
KINGWOOD
SAN MARCOS
LA GRANGE
HOUSTON
SCHULENBURG
SEA RIM STATE PARK
EAGLE LAKE
SAN ANTONIO
GONZALES
TEXAS CITY
JAMAICA BEACH
CUERO
PLEASANTON
EDNA
LAKE JACKSON
KENEDY
SARGENT
GOLIAD
PORT LAVACA
BEEVILLE
SEADRIFT
ST PAUL
CORPUS CHRISTI
SPoRT WRF reflectivity
Control WRF reflectivity
August 21st 2 PM
WRF4km_NOMC 1km AGL Reflectivity (dBZ) 21.12 8HR Sun 20:00Z 21-Aug-11
khgx 0.5 Reflectivity (dBZ) 8bit Sun 20:00Z 21-Aug-11
WRF4km_NOMC 1km AGL Reflectivity (dBZ) 21.12 8HR Sun 20:00Z 21-Aug-11
Status:
Radar:
Frames: 42 Time: 12:19 Z 22-Aug-11


Forecast Systems Laboratory D-2D (Iwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WarnGen
Valid time seq
State(s)
Clear
Frames: 42
Mag: 1
Density: 0.33
-20 10 -0+ 10 20 30 40 50 60 70
VCP 11
1 km
WACO
GATESVILLE
BUFFALO
LOMETA
KILLEEN
BREMOND
AUSTONIO
BURR FERRY
CORRIGAN
MADISONVILLE
CAMERON
BURNET
HUNTSVILLE
WOODVILLE
BRYAN
LONGVILLE
ROUND ROCK
LEXINGTON
SHEPHERD
BUNA
NAVASOTA
AUSTIN
MOSS HILL
LAKE CHARLES
BLANCO
BASTROP
BEAUMONT
KINGWOOD
SAN MARCOS
HOUSTON
SCHULENBURG
SEA RIM STATE PARK
EAGLE LAKE
SAN ANTONIO
GONZALES
NEEDVILLE
TEXAS CITY
EL CAMPO
JAMAICA BEACH
CUERO
LAKE JACKSON
PLEASANTON
SARGENT
KENEDY
GOLIAD
PORT LAVACA
BEEVILLE
SEADRIFT
ST PAUL
SPoRT WRF reflectivity
Control WRF reflectivity
August 21st 5 PM
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 21.12
khgx 0.5 Reflectivity (dBZ) 8bit Sun 22:02Z 21-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 21.12
Status:
Radar:
Frames: 42
Time: 12:20 Z 22-Aug-11


Forecast Systems Laboratory D-2D (lwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WamGen
Valid time seq
State(s)
Clear
Frames: 42
Mag: 1
Density: 0.33
-20 10 -0+ 10 20 30 40 50 MEXIA 60 70
VCP 11
1 km
WACO
GATESVILLE
BUFFALO
LOMETA
KILLEEN
BREMOND
AUSTONIO
MADISONVILLE
CORRIGAN
BURR FERRY
CAMERON
BURNET
WOODVILLE
HUNTSVILLE
BRYAN
LONGVILLE
ROUND ROCK
LEXINGTON
SHEPHERD
BUNA
NAVASOTA
AUSTIN
MOSS HILL
LAKE CHARLES
BLANCO
BASTROP
BRENHAM
BEAUMONT
KINGWOOD
SAN MARCOS
LA GRANGE
HOUSTON
SCHULENBURG
SEA RIM STATE PARK
EAGLE LAKE
GONZALES
SAN ANTONIO
NEEDVILLE
TEXAS CITY
EL CAMPO
JAMAICA BEACH
CUERO
PLEASANTON
EDNA
LAKE JACKSON
KENEDY
SARGENT
GOLIAD
PORT LAVACA
BEEVILLE
SEADRIFT
ST. PAUL
SPoRT WRF reflectivity
Control WRF reflectivity
August 21st 6 PM
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 21.12 11HR Sun 23-01Z 21-Aug-11
khgx 0.5 Reflectivity (dBZ) 8bit Sun 23-01Z 21-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 21.12 11HR Sun 23-01Z 21-Aug-11
Status:
Radar:
Frames: 42 Time: 12:20 Z 22-Aug-11


Forecast Systems Laboratory D-2D (Iwood)
File View Options Tools Volume Obs NCEP/Hydro Local Upper Air Satellite khgx thou tiah klch kcrp kewx kgrk Radar SCAN Maps Help
WarnGen
Valid time seq
State(s)
Clear
Frames: 42
Mag: 1
Density: 0.33
VCP 11
1 km
WACO
GATESVILLE
BUFFALO
NACOGDOCHES
MANY
LUFKIN
HEMPHILL
LOMETA
KILLEEN
BREMOND
AUSTONIO
BURR FERRY
CORRIGAN
MADISONVILLE
CAMERON
BURNET
WOODVILLE
HUNTSVILLE
BRYAN
LONGVILLE
ROUND ROCK
LEXINGTON
SHEPHERD
BUNA
AUSTIN
NAVASOTA
MOSS HILL
LAKE CHARLES
BLANCO
BEAUMONT
KINGWOOD
SAN MARCOS
HOUSTON
SEA RIM STATE PARK
GONZALES
SAN ANTONIO
NEEDVILLE
JAMAICA BEACH
CUERO
PLEASANTON
EDNA
LAKE JACKSON
KENEDY
SARGENT
GOLIAD
PORT LAVACA
BEEVILLE
SEADRIFT
ST. PAUL
Both versions over forecasting convection!
August 21st 9 PM
SPoRT WRF reflectivity
Control WRF reflectivity
WRF4km_NOMO 1kmAgl Reflectivity (dBZ) 22.00 2HR Mon 02:00Z 22-Aug-11
khgx 0.5 Reflectivity (dBZ) 8bit Mon 02:02Z 22-Aug-11
WRF4km 1kmAgl Reflectivity (dBZ) 22.00 2HR Mon 02:00Z 22-Aug-11
Status:
Radar:
Frames: 42 Time: 12:21 Z 22-Aug-11

It has been HOT!!



Going Forward

- Objectively verify with MET (Model Evaluation Tools) package.
- Experiment with different initialization methods (RUC, LAPS, etc.)
- Thanks for support from Mark Keehn (HGX ITO), Scott Overpeck (HGX WRF focal point), and Bob Rozumalski (NWS Nat'l SOO)

Questions ????