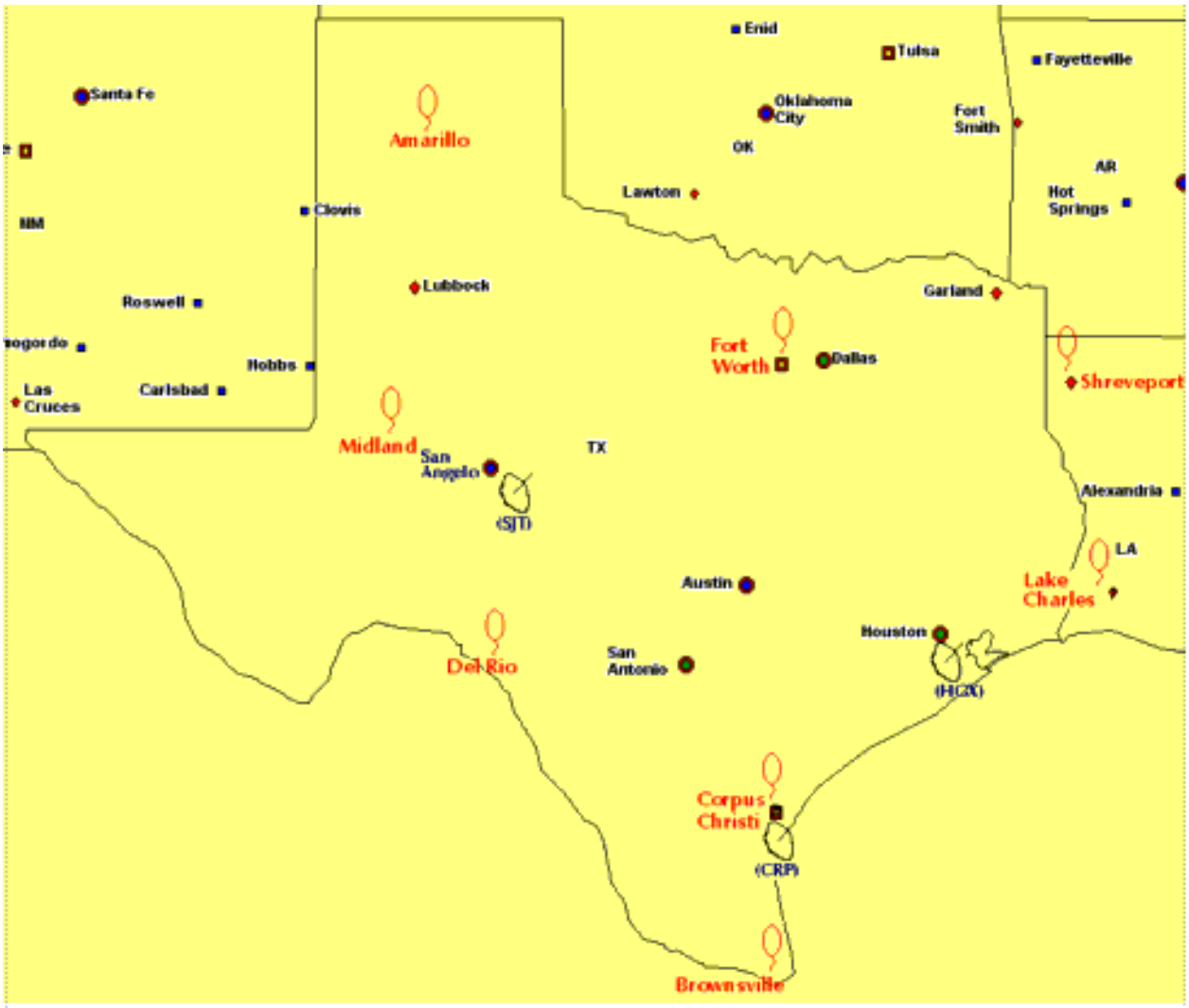


Fig. 2.0: WSR-88D radar and radiosonde sites in Texas and vicinity, circa 1998

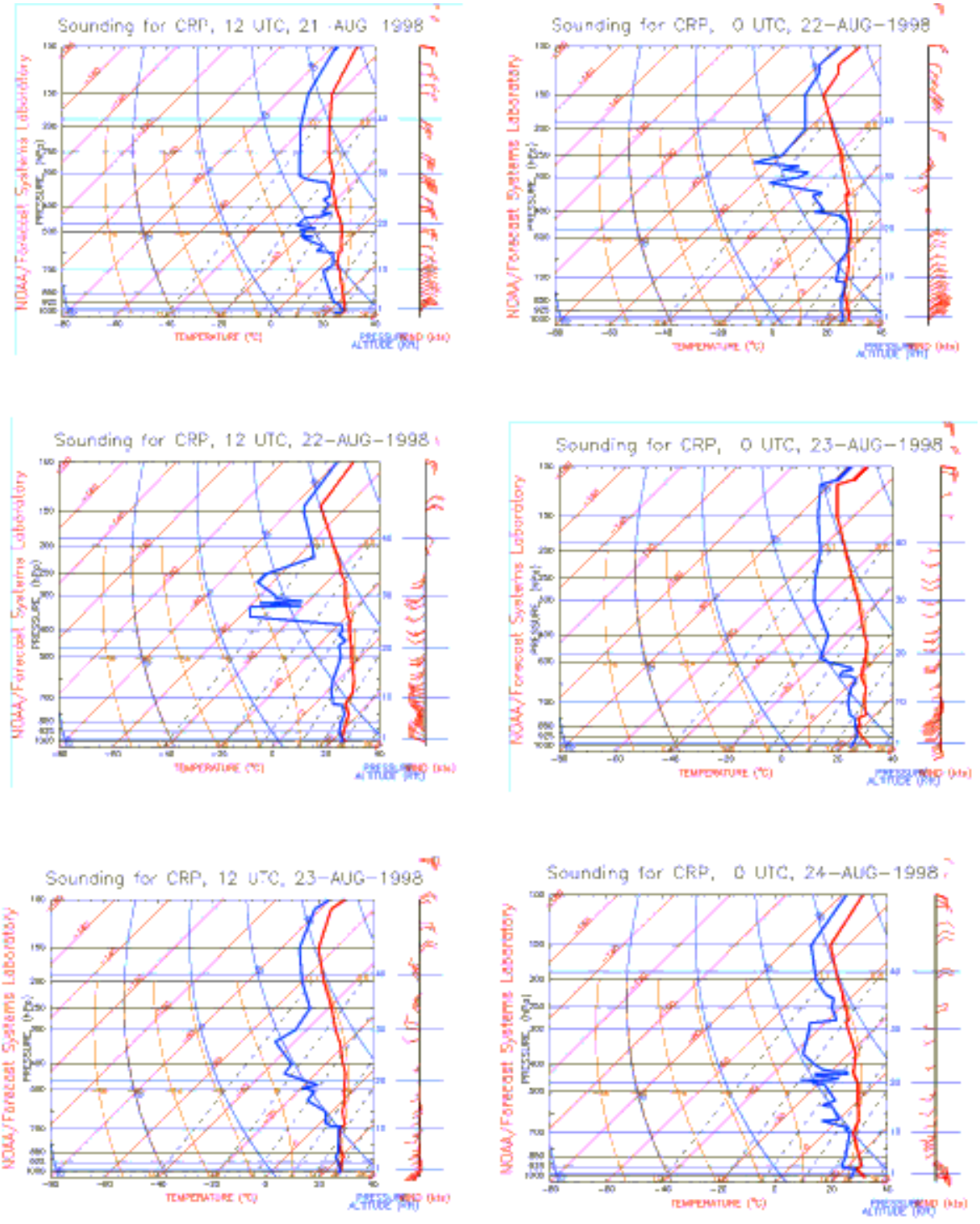


Fig. 2.1A. Atmospheric sounding sequence (skewT/logP) for Corpus Christi, TX (CRP) for 8/21/98 12 UTC - 8/24/98 00 UTC, every 12 hours (left to right, then down)

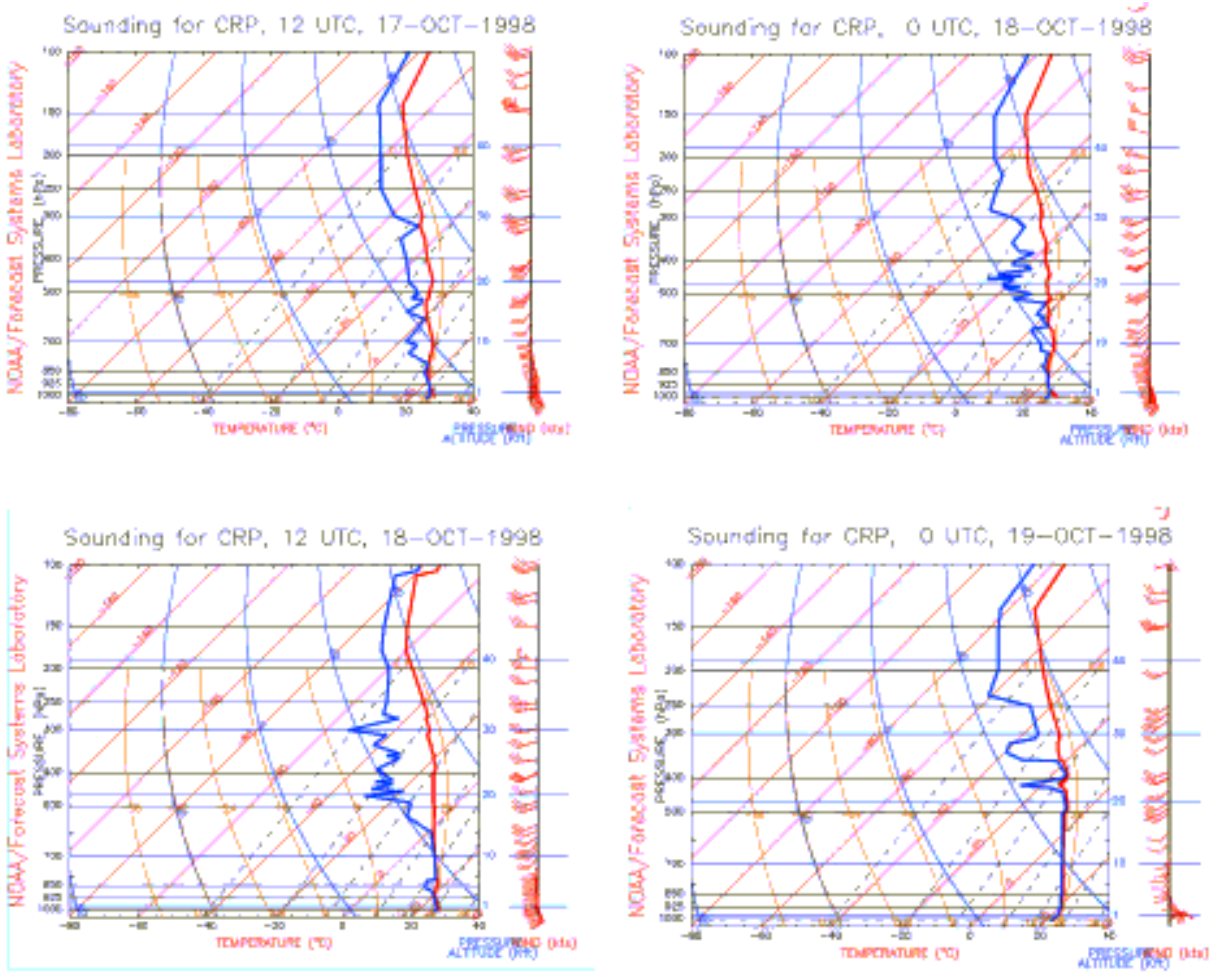


Fig. 2.1O. Atmospheric sounding sequence (skewT/logP) for Corpus Christi, TX (CRP) for 10/17/98 12 UTC - 10/19/98 00 UTC, every 12 hours (left to right, then down)

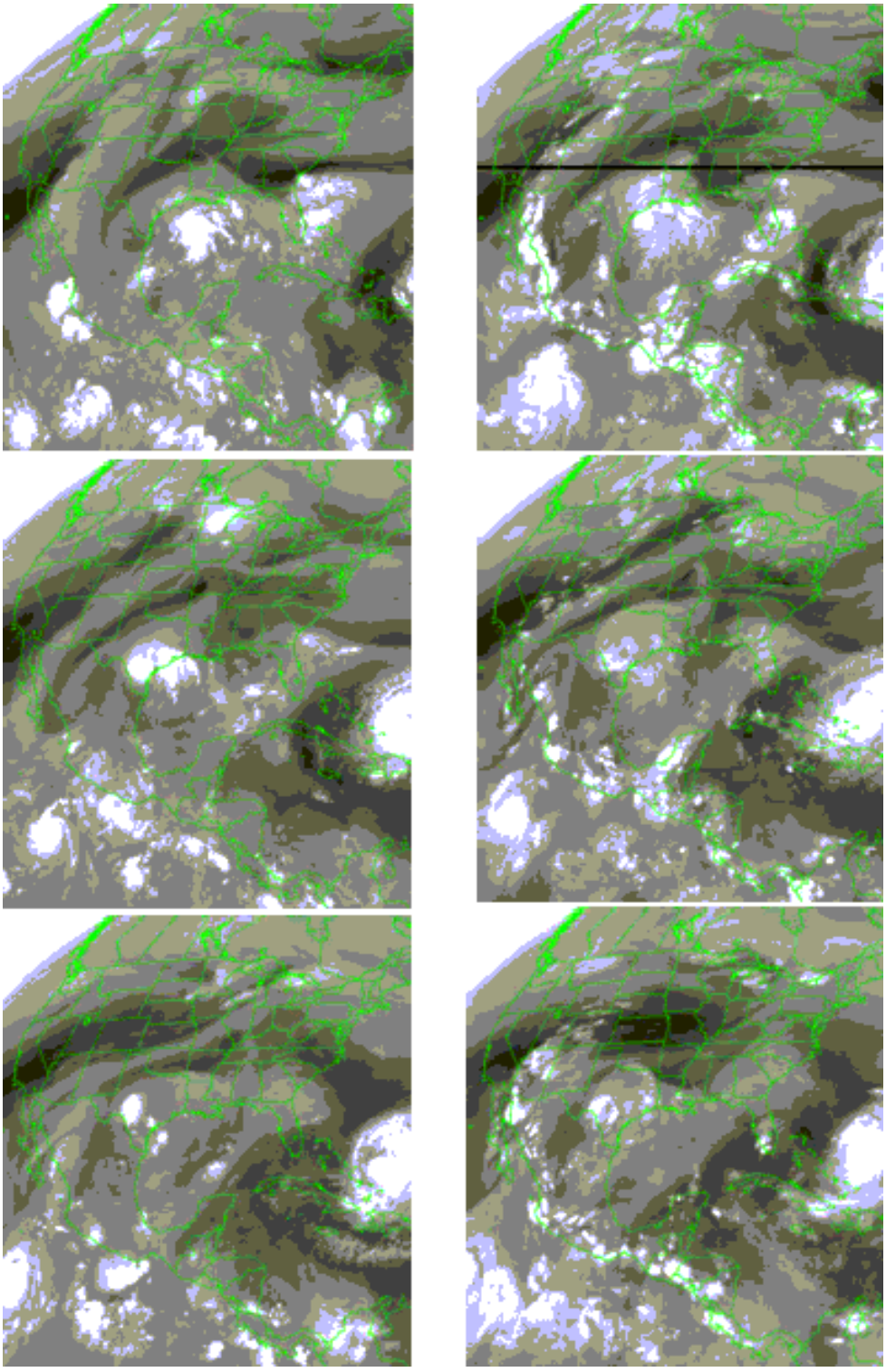


Fig. 2.2A. GOES Satellite - water vapor imagery sequence for 8/21/98 12 UTC - 8/24/98 00 UTC, every 12 hours (left to right, then down)

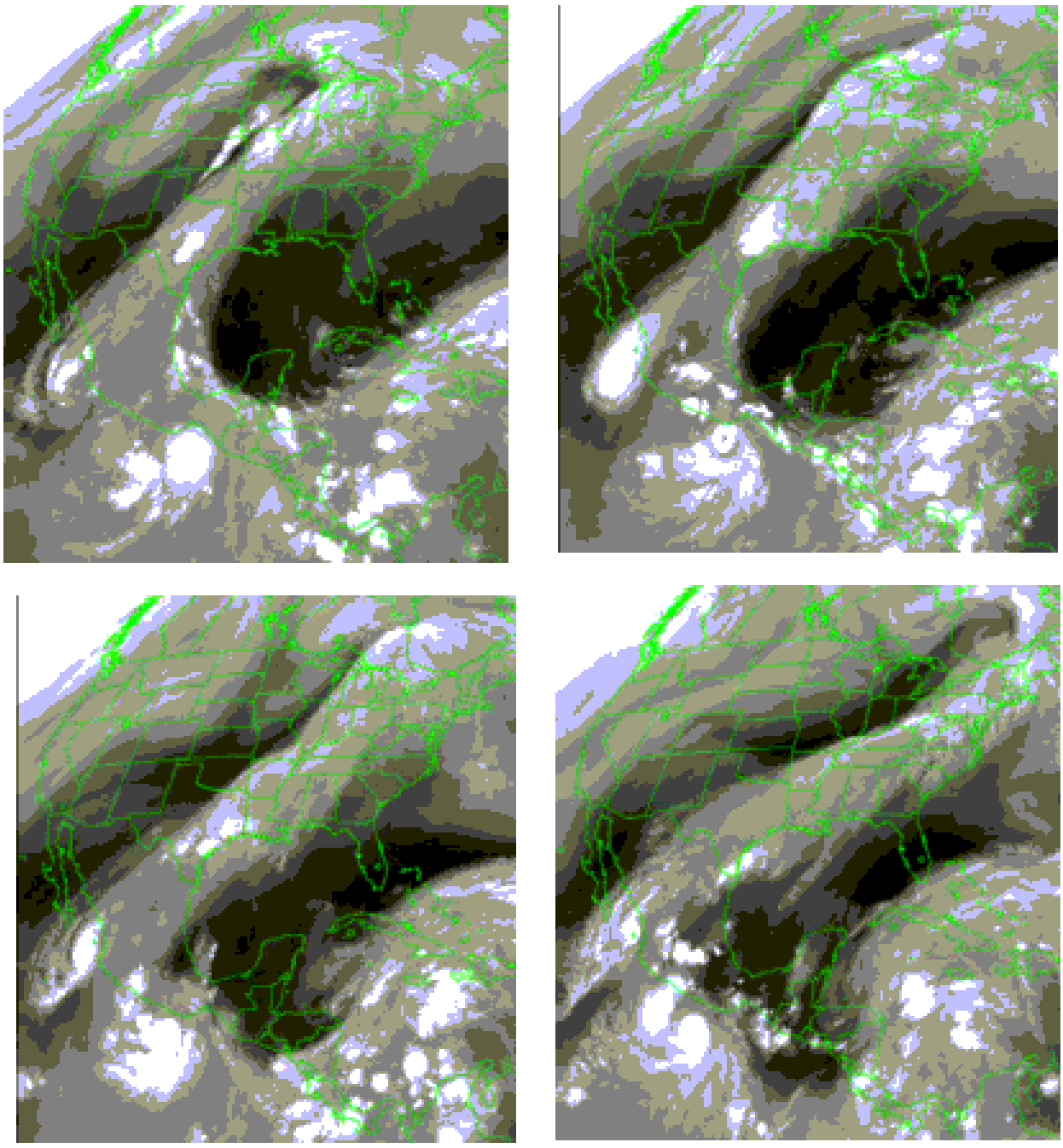


Fig. 2.2O. GOES Satellite - water vapor imagery sequence for 10/17/98 12 UTC - 10/19/98 00 UTC, every 12 hours (left to right, then down)

Houston, TX (HGX) 08/21-24/98: Level 1 Base Reflectivity Images

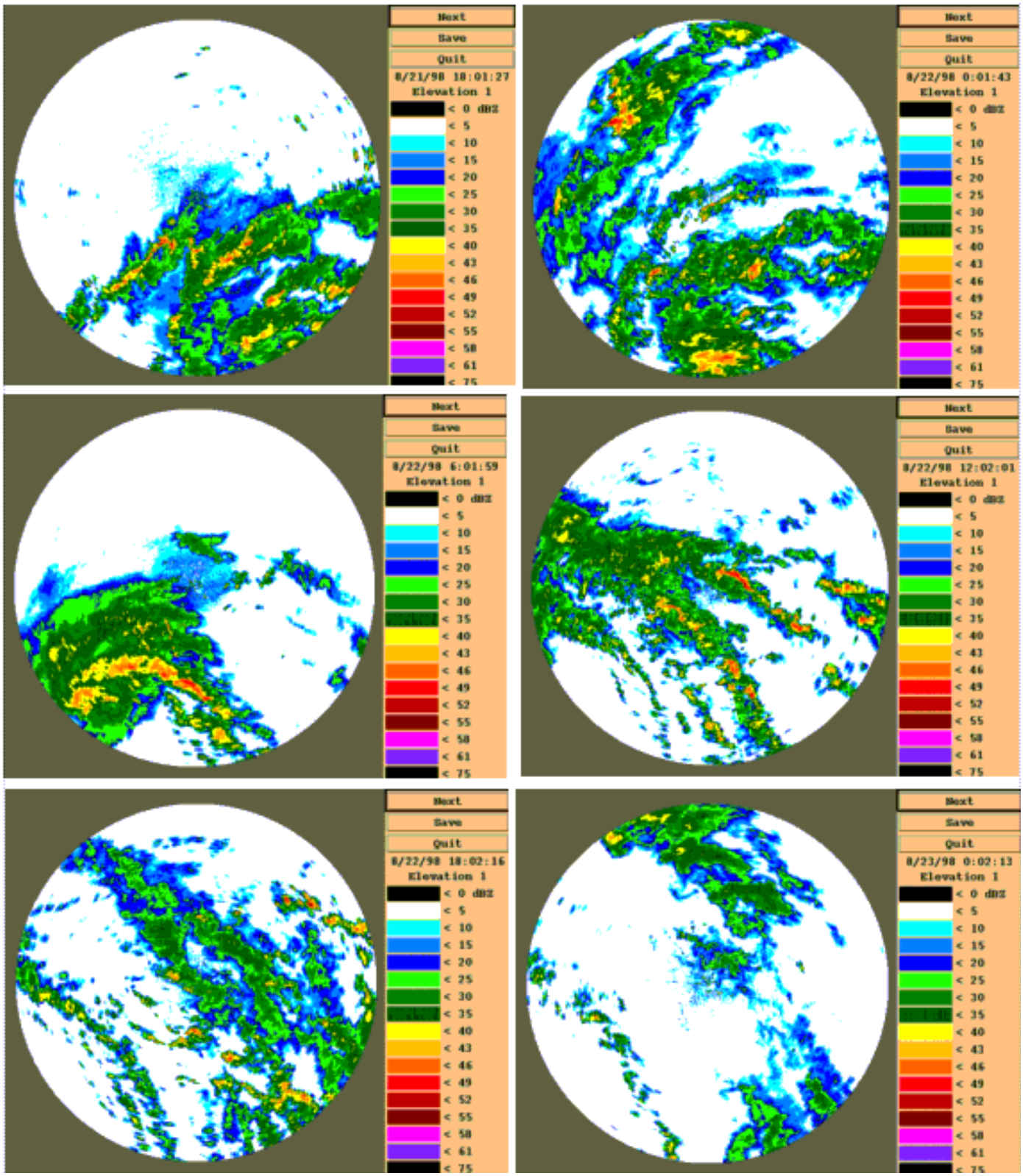


Fig . 2.3A.H: Overview of evolution of August 21-24 Houston (KHGX) simulation provided by level 1 Base Reflectivity images (every 6 hours).

San Angelo, TX (SJT) 08/21-24/98: Level 1 Base Reflectivity Images

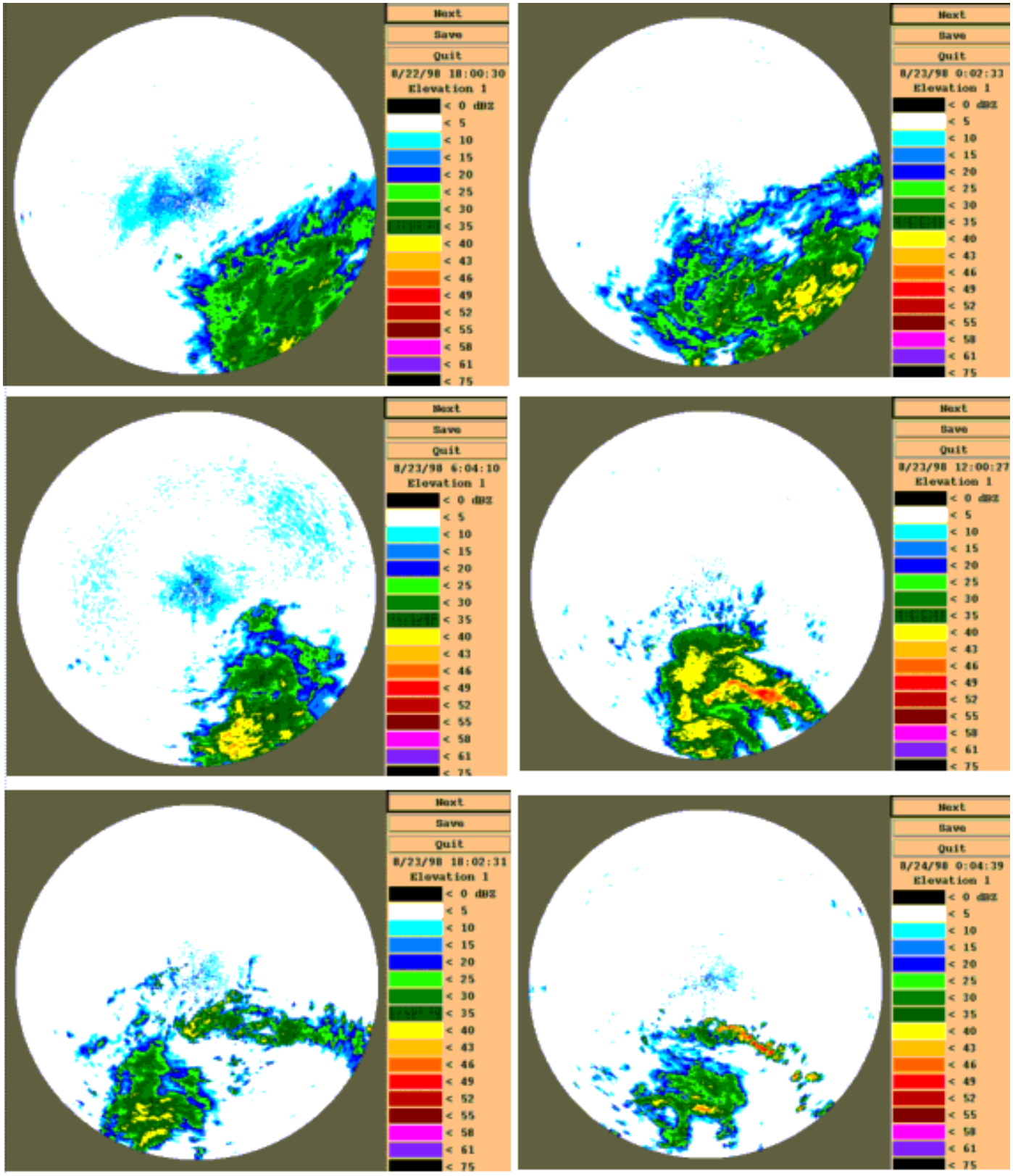


Fig . 2.3A.S: Overview of evolution of August 21-24 San Angelo (KSJT) simulation provided by level 1 Base Reflectivity images (every 6 hours).

Houston, TX (HGX) 10/17-19/98: Level 1 Base Reflectivity Images

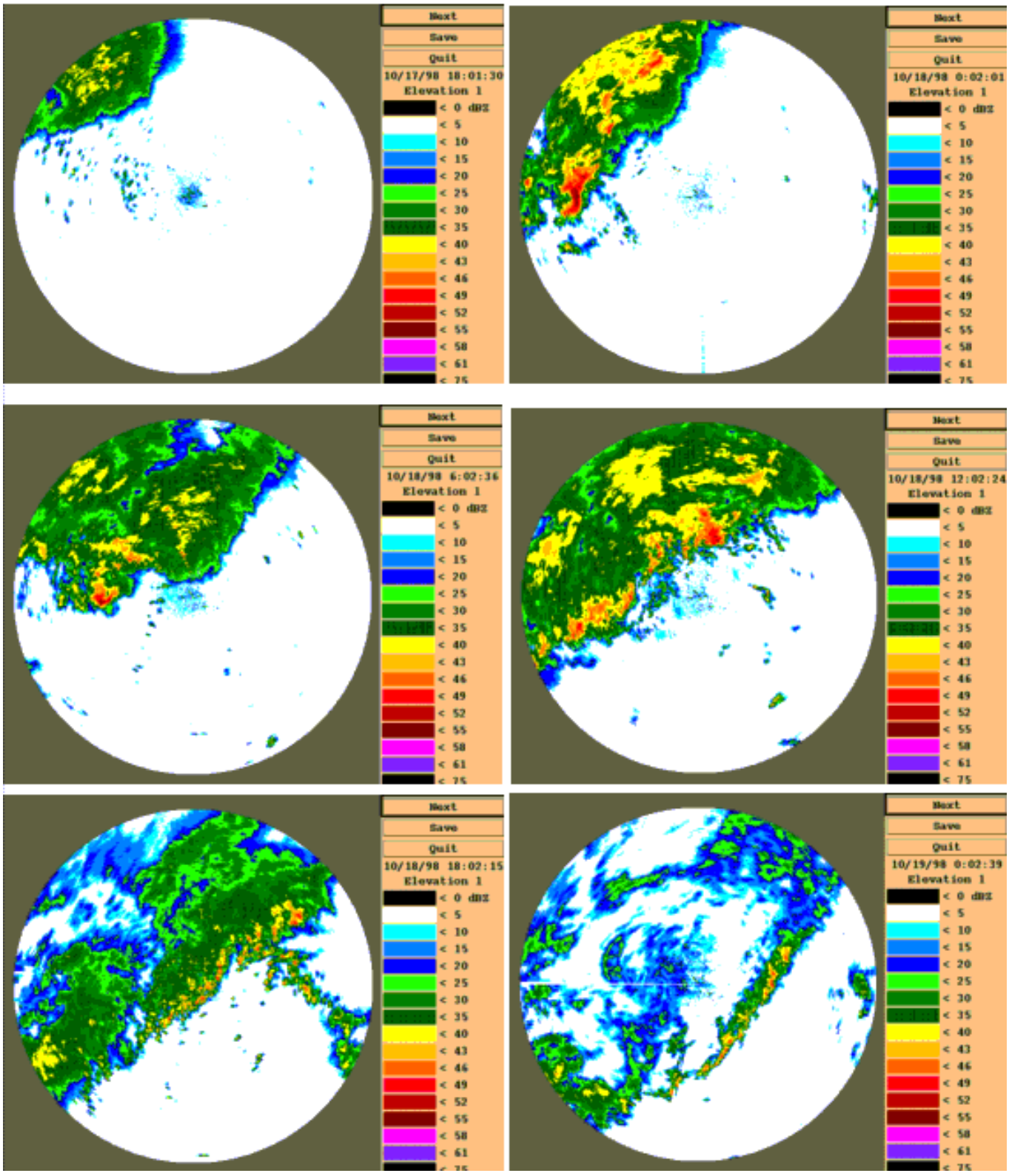


Fig . 2.3O.H: Overview of evolution of October 17-19 Houston (KHGX) simulation provided by level 1 Base Reflectivity images (every 6 hours).

Corpus Christi, TX (CRP) 10/17-19/98: Level 1 Base Reflectivity Images

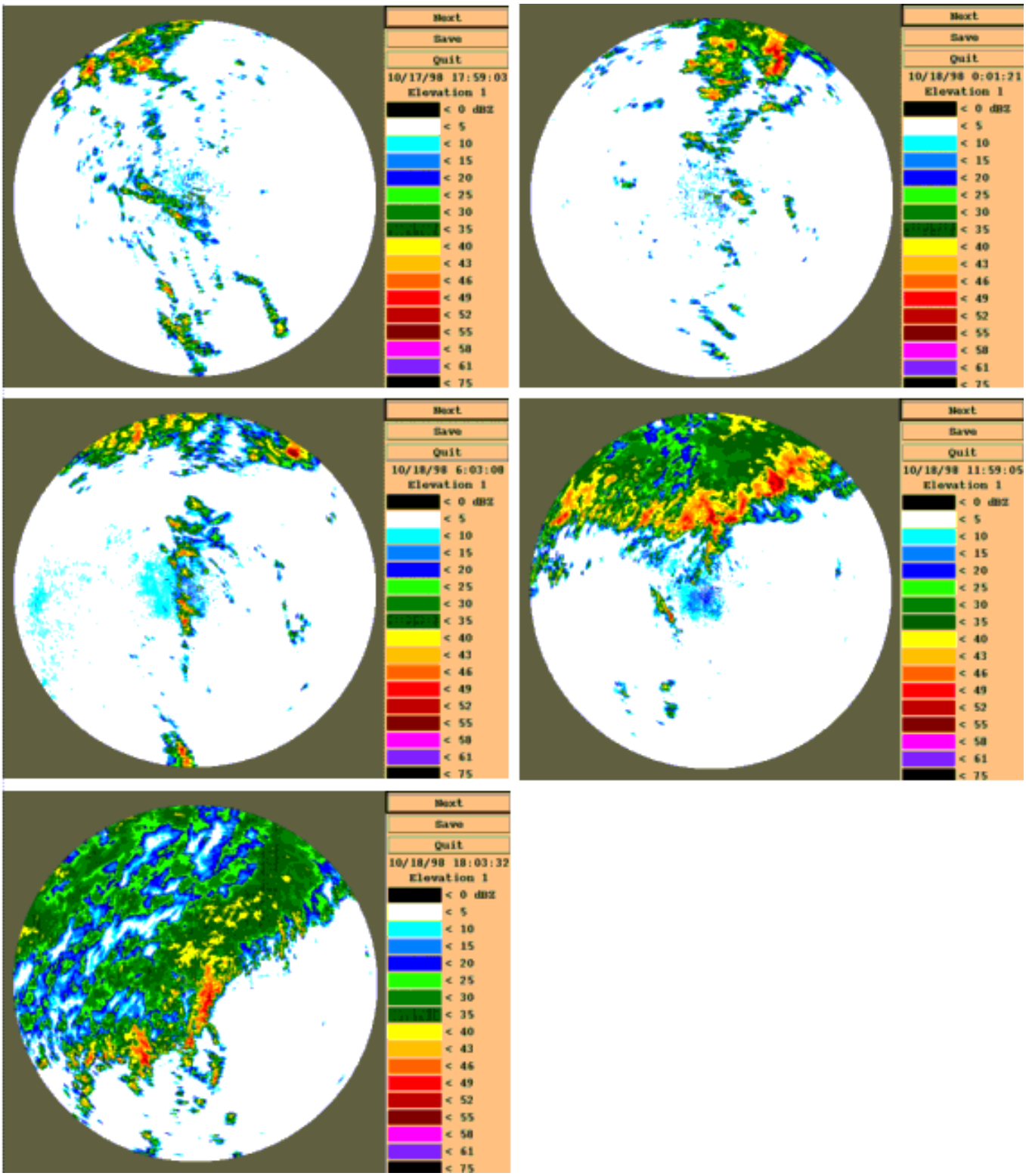


Fig . 2.3O.C: Overview of evolution of Oct. 17-19 Corpus Christi (KCRP) simulation provided by level 1 Base Reflectivity images (every 6 hours).

Houston, TX (HGX) 08/21-24/98: Default Z-R; Default Hail Cap simulations

1-Hour Gage-Radar analyses

24-Hour Gage-Radar analyses

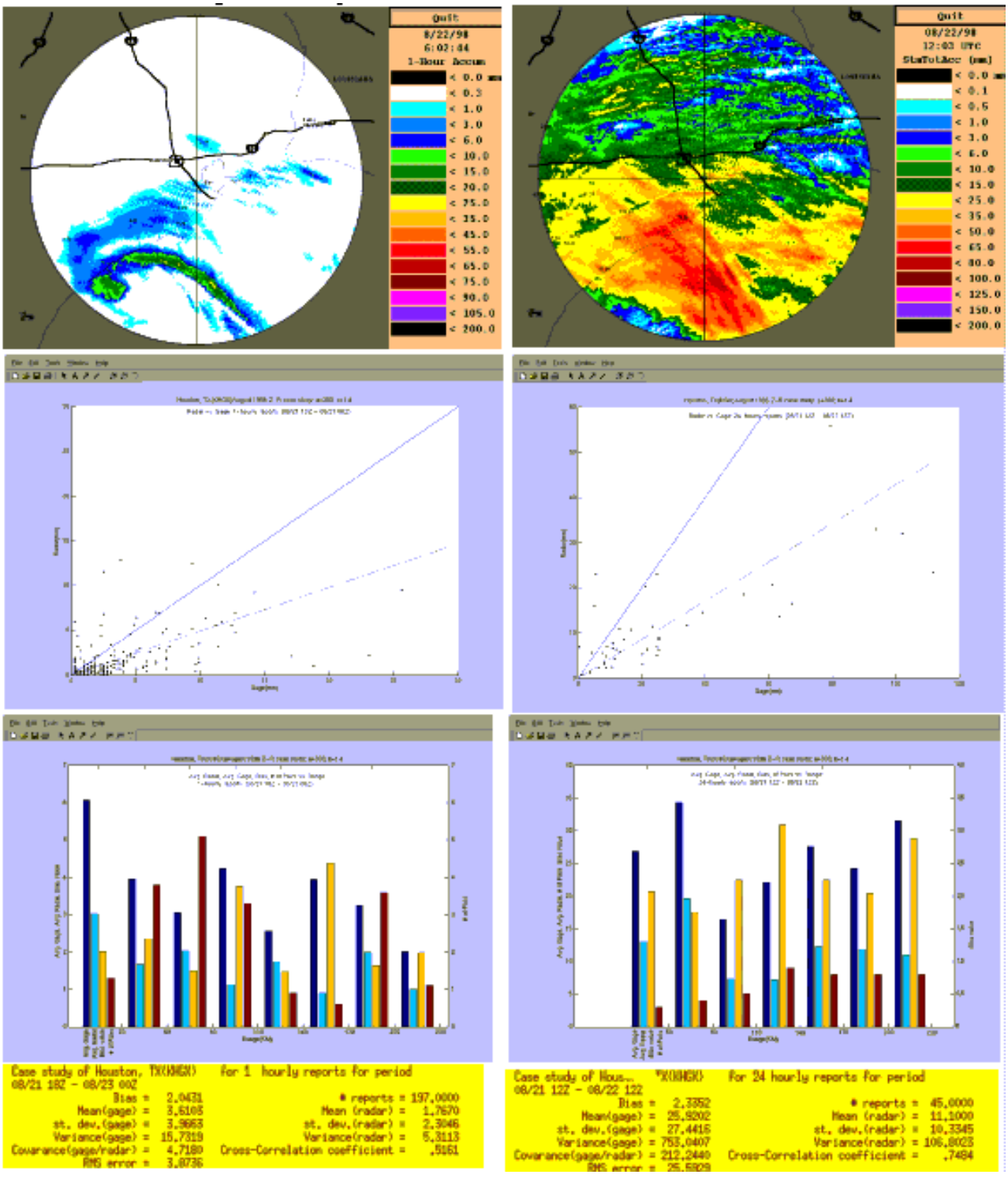
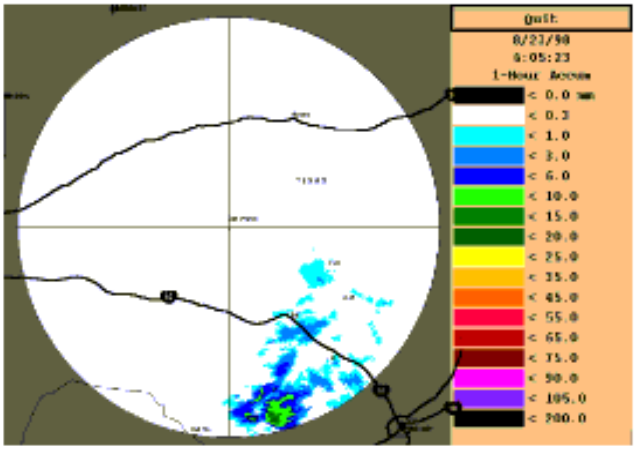


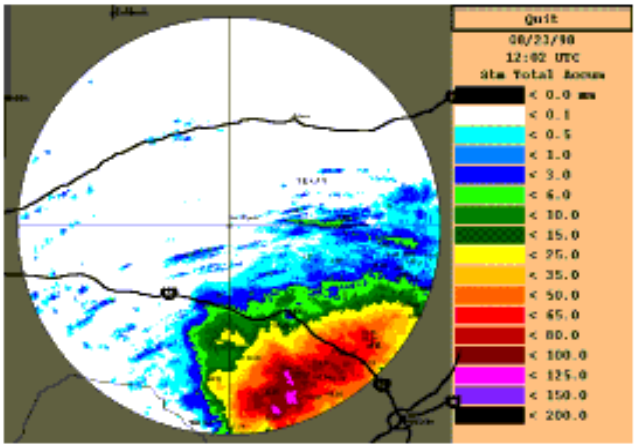
Fig. 2.4A.H: Overview of results from August 21-24 Houston (KHGX) simulation with Default Z-R (a=300; b=1.4) and Default Hail Cap threshold (103.8 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 08/21 18UTC - 08/23 00 UTC); Right column: analysis of 24-hr G-R pairs ending 08/22 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 08/22/98 06 UTC); Right: STP for 24 hours); Gage (X) vs. Radar (Y) "Scatter Diagram"; Bias, Avg. Gage, Avg. Radar and # G-R Pairs vs. Range; Summary of Statistics for case. (all accum. units mm)

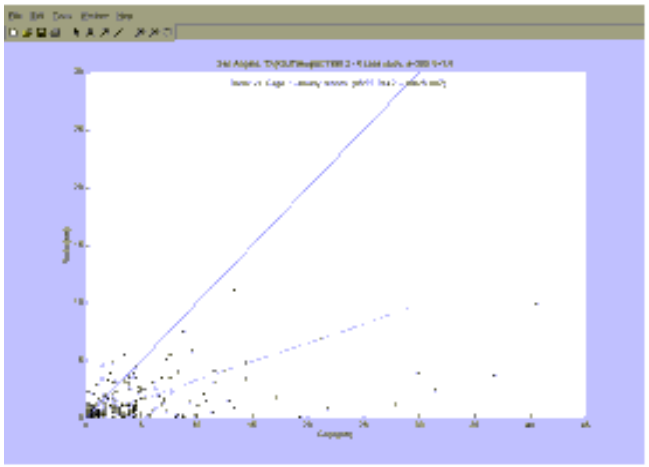
San Angelo, TX (SJT) 08/21-24/98: Default Z-R; Default Hail Cap simulations

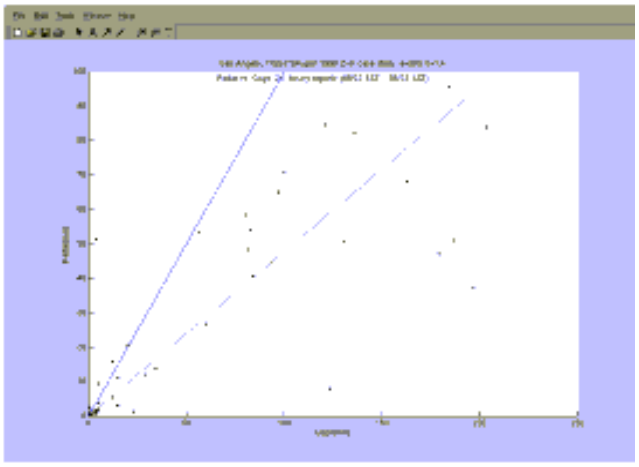
1-Hour Gage-Radar analyses

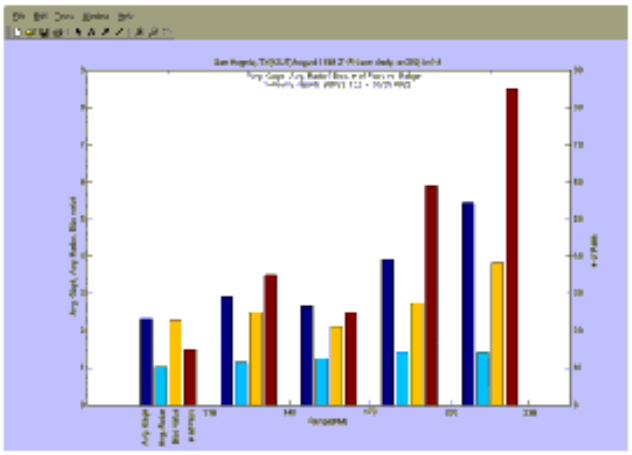
24-Hour Gage-Radar analyses

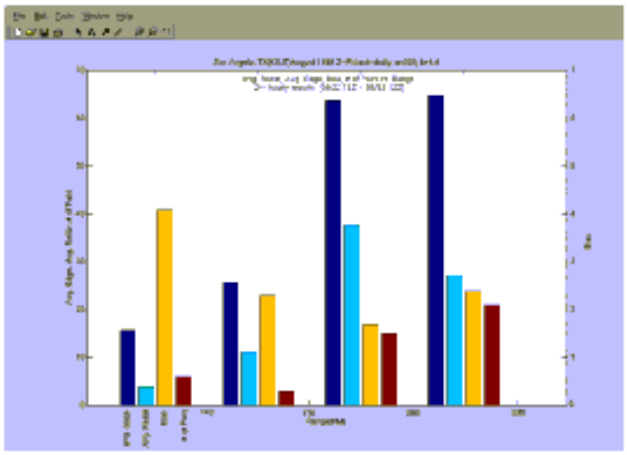












Case study of San Angelo, TX(KSJT) for 1 hourly reports for period
08/22 12Z - 08/25 00Z

Bias =	3.0648	# reports =	219.0000
Mean(gage) =	4.1032	Mean (radar) =	1.3388
st. dev.(gage) =	5.8154	st. dev.(radar) =	1.5796
Variance(gage) =	33.8188	Variance(radar) =	2.4951
Covarance(gage/radar) =	4.2742	Cross-Correlation coefficient =	.4653
RMS error =	5.9504		

Case study of San Angelo, TX(KSJT) for 24 hourly reports for period
08/22 12Z - 08/23 12Z

Bias =	2.0909	# reports =	45.0000
Mean(gage) =	55.3380	Mean (radar) =	26.4660
st. dev.(gage) =	65.3767	st. dev.(radar) =	29.4716
Variance(gage) =	4274.1162	Variance(radar) =	868.5728
Covarance(gage/radar) =	1571.2003	Cross-Correlation coefficient =	.8195
RMS error =	53.2327		

Fig. 2.4A.S: Overview of results from August 21-24 San Angelo (KSJT) simulation with Default Z-R (a=300; b=1.4) and Default Hail Cap threshold (103.8 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 08/22 12 UTC - 08/25 00 UTC); Right column: analysis of 24-hr G-R pairs ending 08/23 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 08/23/98 06 UTC); Right: STP for 24 hours); Gage (X) vs. Radar (Y) "Scatter Diagram"; Bias, Avg. Gage, Avg. Radar and # G-R Pairs vs. Range; Summary of Statistics for case. (all accum. units mm)

Houston, TX (HGX) 10/17-19/98: Default Z-R; Default Hail Cap simulations

1-Hour Gage-Radar analyses

24-Hour Gage-Radar analyses

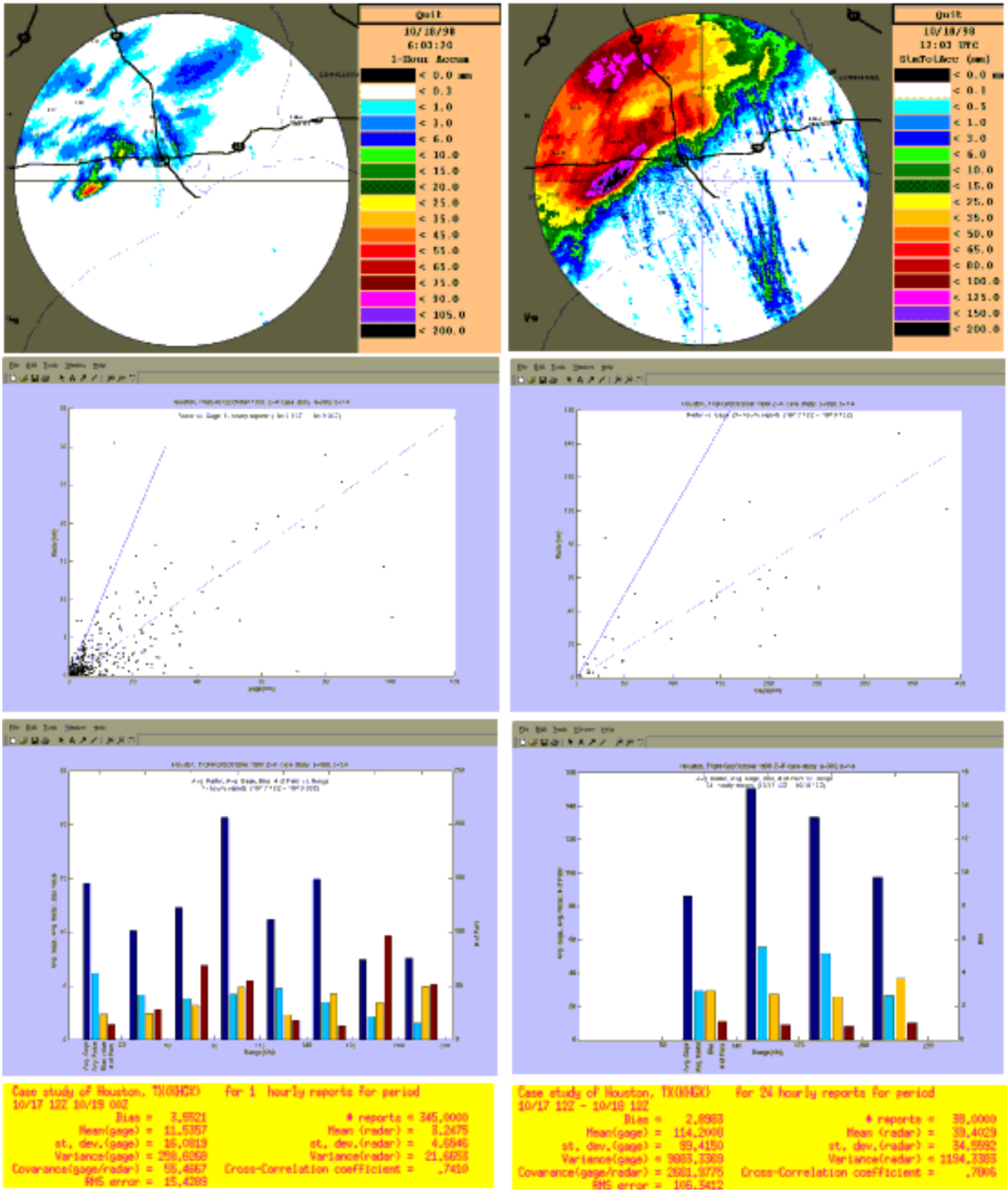


Fig. 2.4O.H: Overview of results from October 17-19 Houston (KHGX) simulation with Default Z-R (a=300; b=1.4) and Default Hail Cap threshold (103.8 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 10/17 12 UTC - 10/19 00 UTC); Right column: analysis of 24-hr G-R pairs ending 10/18 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 10/18/98 06 UTC); Right: STP for 24 hours); Gage (X) vs. Radar (Y) "Scatter Diagram"; Bias, Avg. Gage, Avg. Radar and # G-R Pairs vs. Range; Summary of Statistics for case. (all accum. units mm)

Corpus Christi, TX (CRP) 10/17-19/98: Default Z-R; Default Hail Cap simulations

1-Hour Gage-Radar analyses

24-Hour Gage-Radar analyses

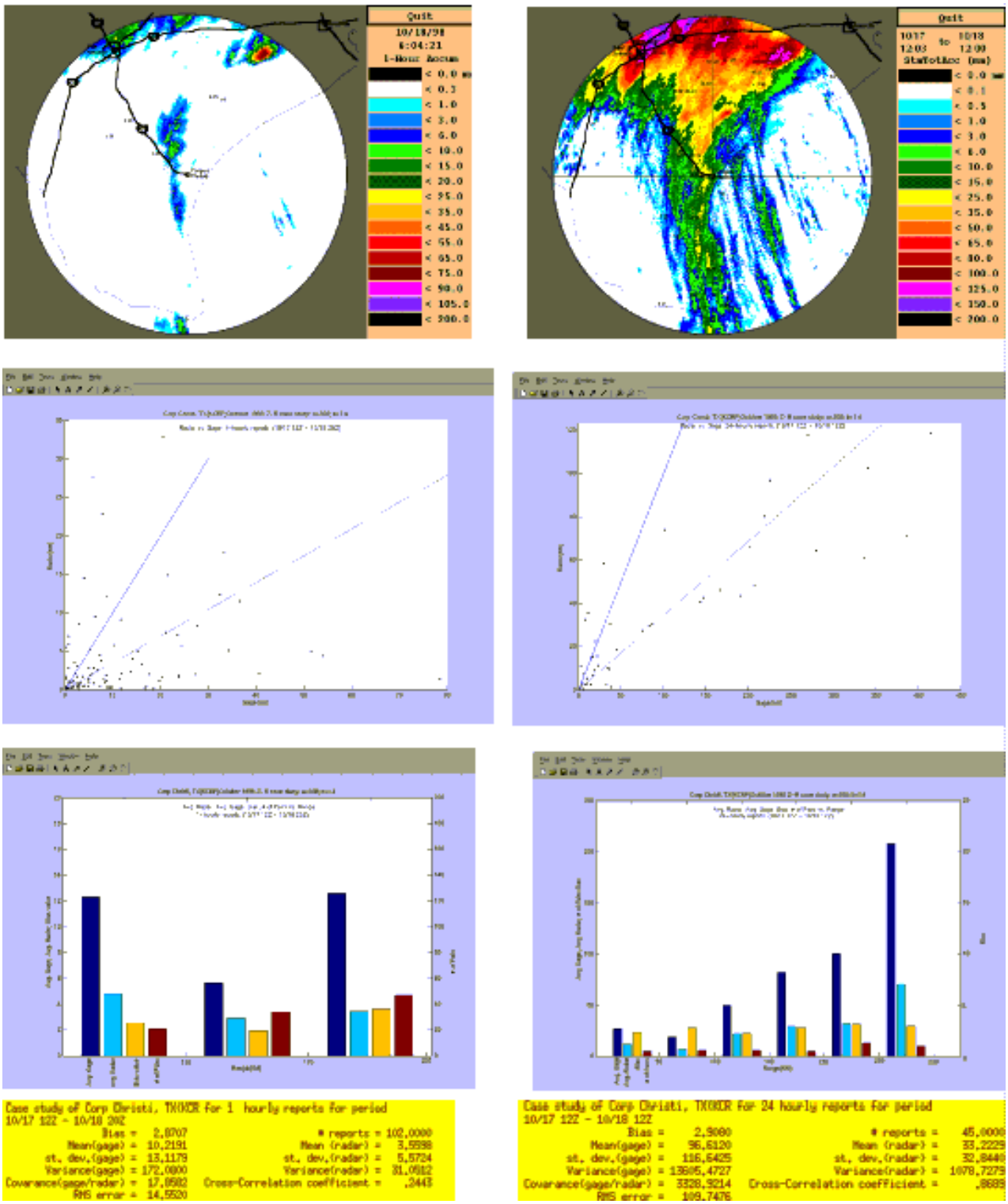


Fig. 2.4O.C: Overview of results from October 17-19 Corpus Christi (KCRP) simulation with Default Z-R (a=300; b=1.4) and Default Hail Cap threshold (103.8 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 10/17 12 UTC - 10/18 20 UTC); Right column: analysis of 24-hr G-R pairs ending 10/18 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 10/18/98 06 UTC); Right: STP for 24 hours); Gage (X) vs. Radar (Y) "Scatter Diagram"; Bias, Avg. Gage, Avg. Radar and # G-R Pairs vs. Range; Summary of Statistics for case. (all accum. units mm)

Houston, TX (HGX) 08/21-24/98: Tropical Z-R; Default Hail Cap simulations

1-Hour Gage-Radar analyses

24-Hour Gage-Radar analyses

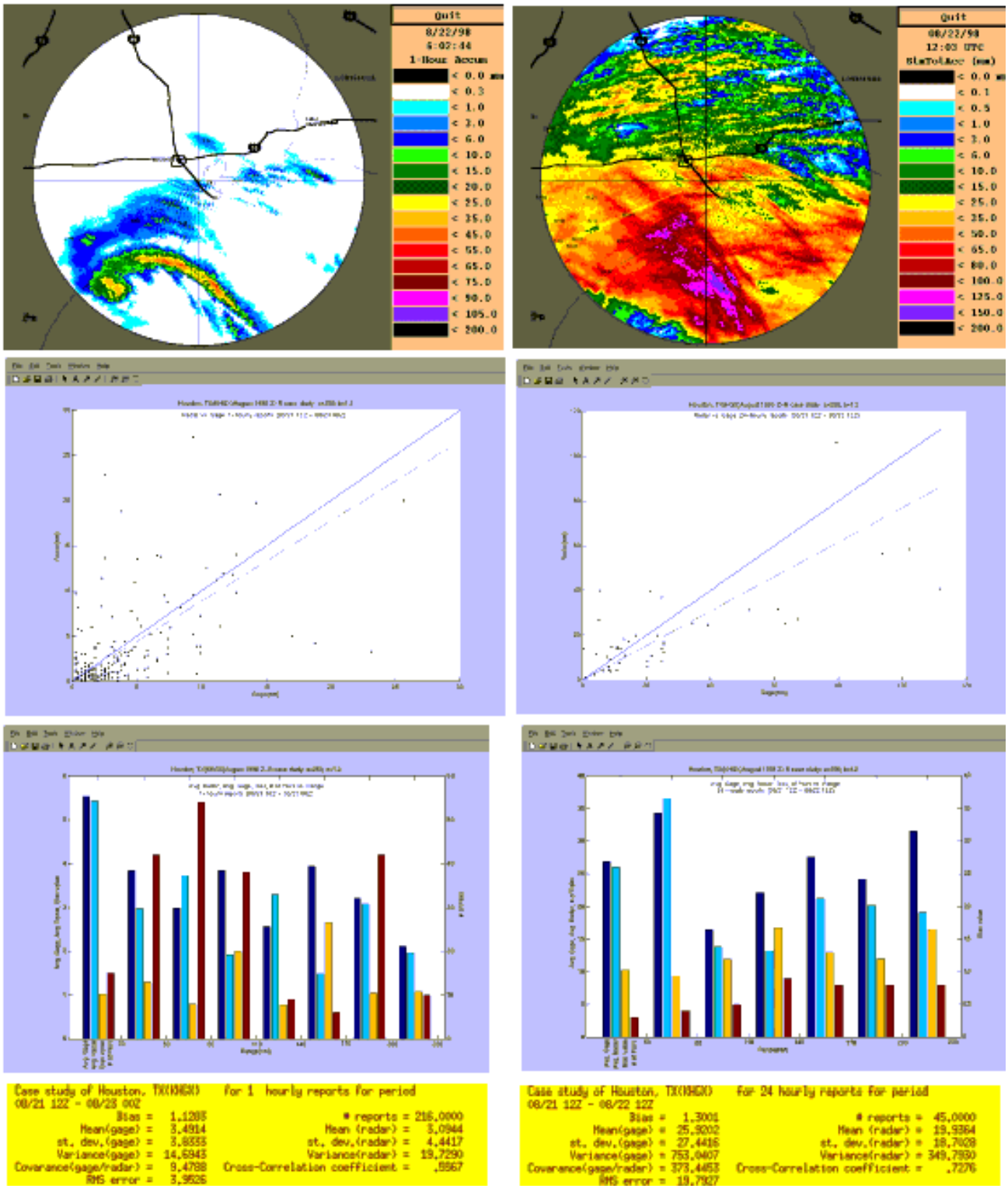


Fig. 2.5A.H: Overview of results from August 21-24 Houston (KHGX) simulation with Tropical Z-R (a=250; b=1.2) and Default Hail Cap threshold (103.8 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 08/21 18UTC - 08/23 00UTC); Right column: analysis of 24-hr G-R pairs ending 08/22 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 08/22/98 06 UTC); Right: STP for 24 hours); Gage (X) vs. Radar (Y) "Scatter Diagram"; Bias, Avg. Gage, Avg. Radar and # G-R Pairs vs. Range; Summary of Statistics for case. (all accum. units mm)

San Angelo, TX (SJT) 08/21-24/98: Tropical Z-R; Default Hail Cap simulations

1-Hour Gage-Radar analyses

24-Hour Gage-Radar analyses

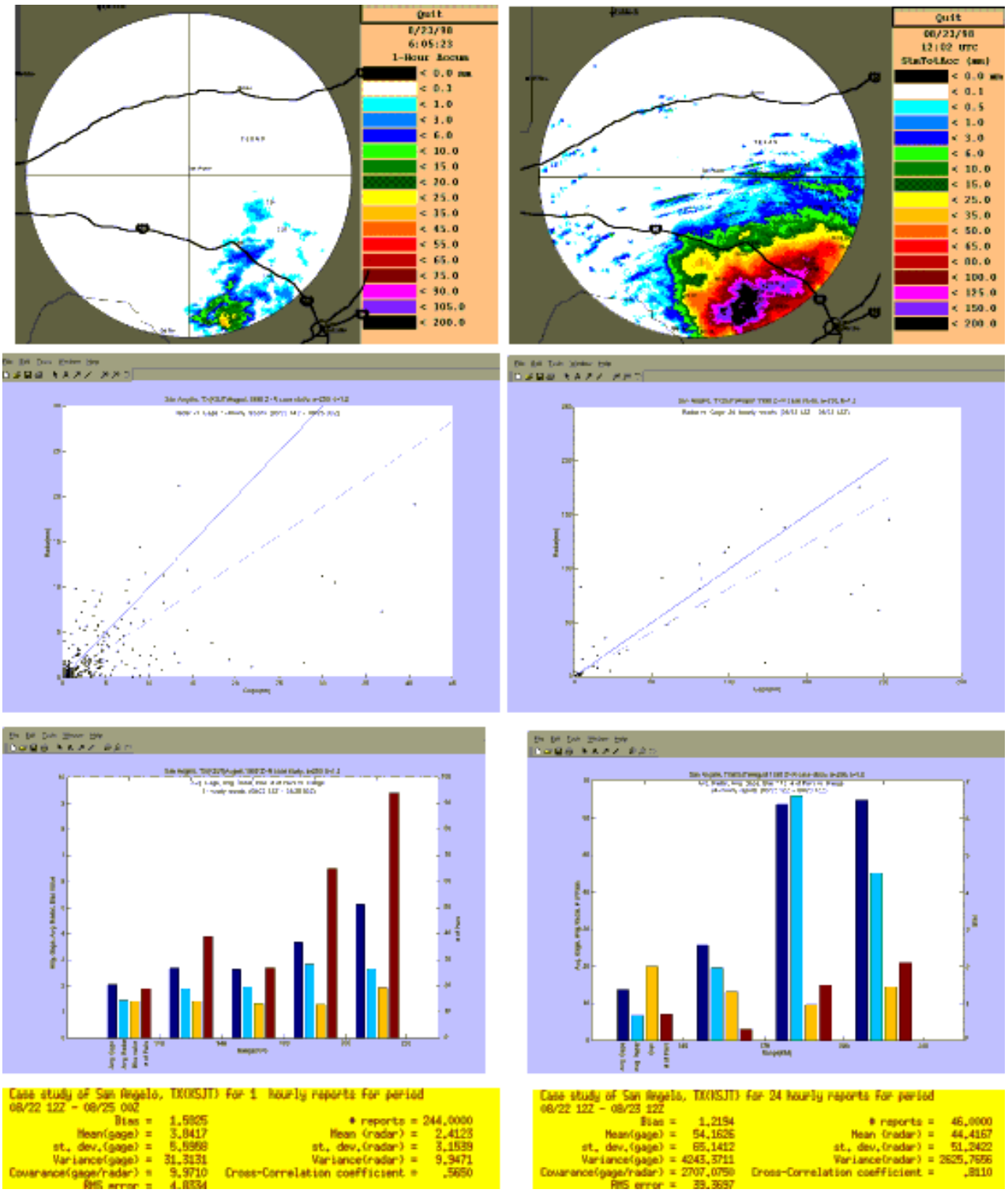


Fig. 2.5A.S: Overview of results from August 21-24 San Angelo (KSJT) simulation with Tropical Z-R (a=250; b=1.2) and Default Hail Cap threshold (103.8 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 08/22 12 UTC - 08/25 00 UTC); Right column: analysis of 24-hr G-R pairs ending 08/23 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 08/23/98 06 UTC); Right: STP for 24 hours); Gage (X) vs. Radar (Y) "Scatter Diagram"; Bias, Avg. Gage, Avg. Radar and # G-R Pairs vs. Range; Summary of Statistics for case. (all accum. units mm)

Houston, TX (HGX) 10/17-19/98: Tropical Z-R; Default Hail Cap simulations

1-Hour Gage-Radar analyses

24-Hour Gage-Radar analyses

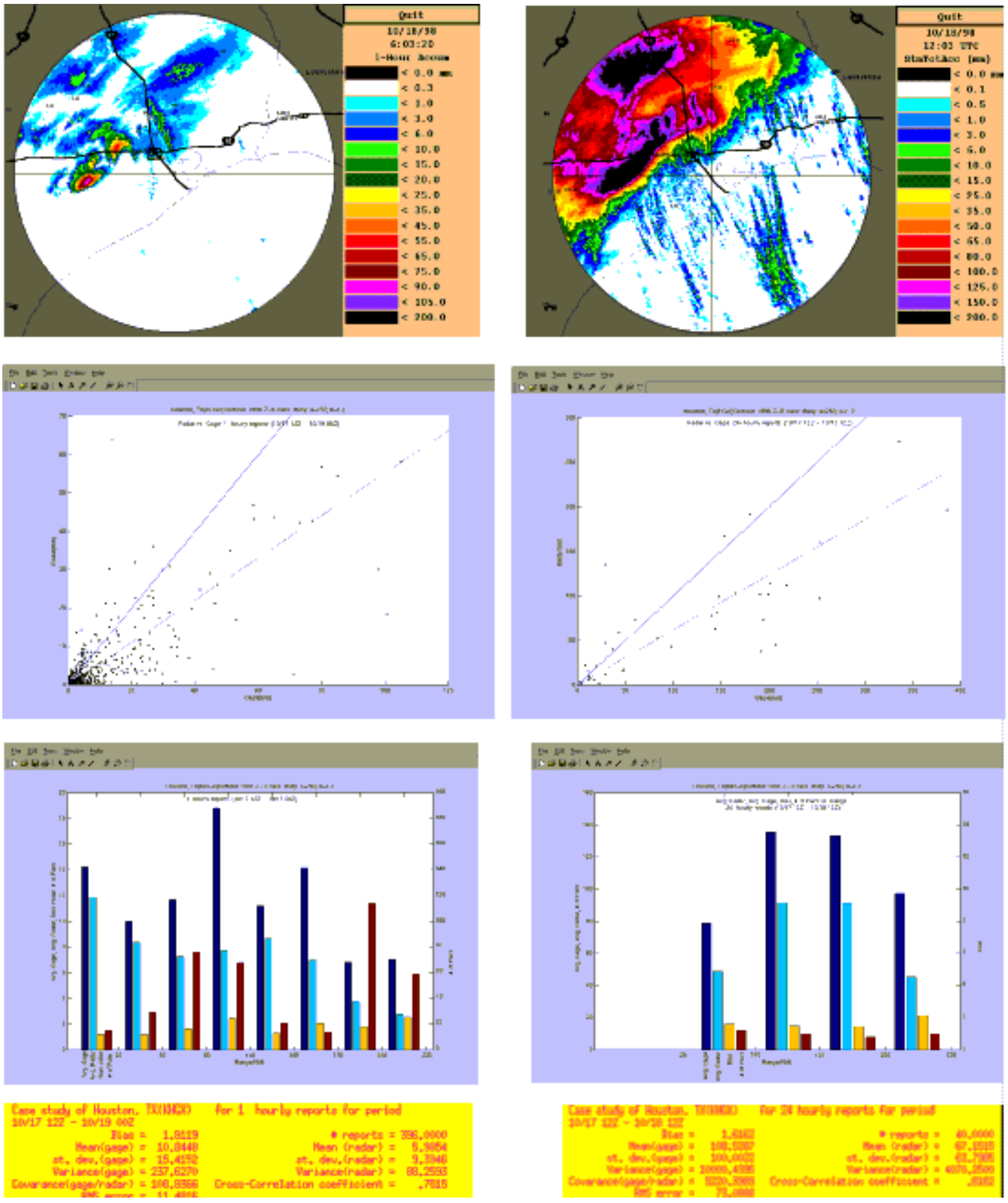


Fig. 2.5O.H: Overview of results from October 17-19 Houston (KHGX) simulation with Tropical Z-R (a=250; b=1.2) and Default Hail Cap threshold (103.8 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 10/17 12UTC - 10/19 00 UTC); Right column: analysis of 24-hr G-R pairs ending 10/18 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 10/18/98 06 UTC); Right: STP for 24 hours); Gage (X) vs. Radar (Y) "Scatter Diagram"; Bias, Avg. Gage, Avg. Radar and # G-R Pairs vs. Range; Summary of Statistics for case. (all accum. units mm)

Corpus Christi, TX (CRP) 10/17-19/98: Tropical Z-R; Default Hail Cap simulations

1-Hour Gage-Radar analyses

24-Hour Gage-Radar analyses

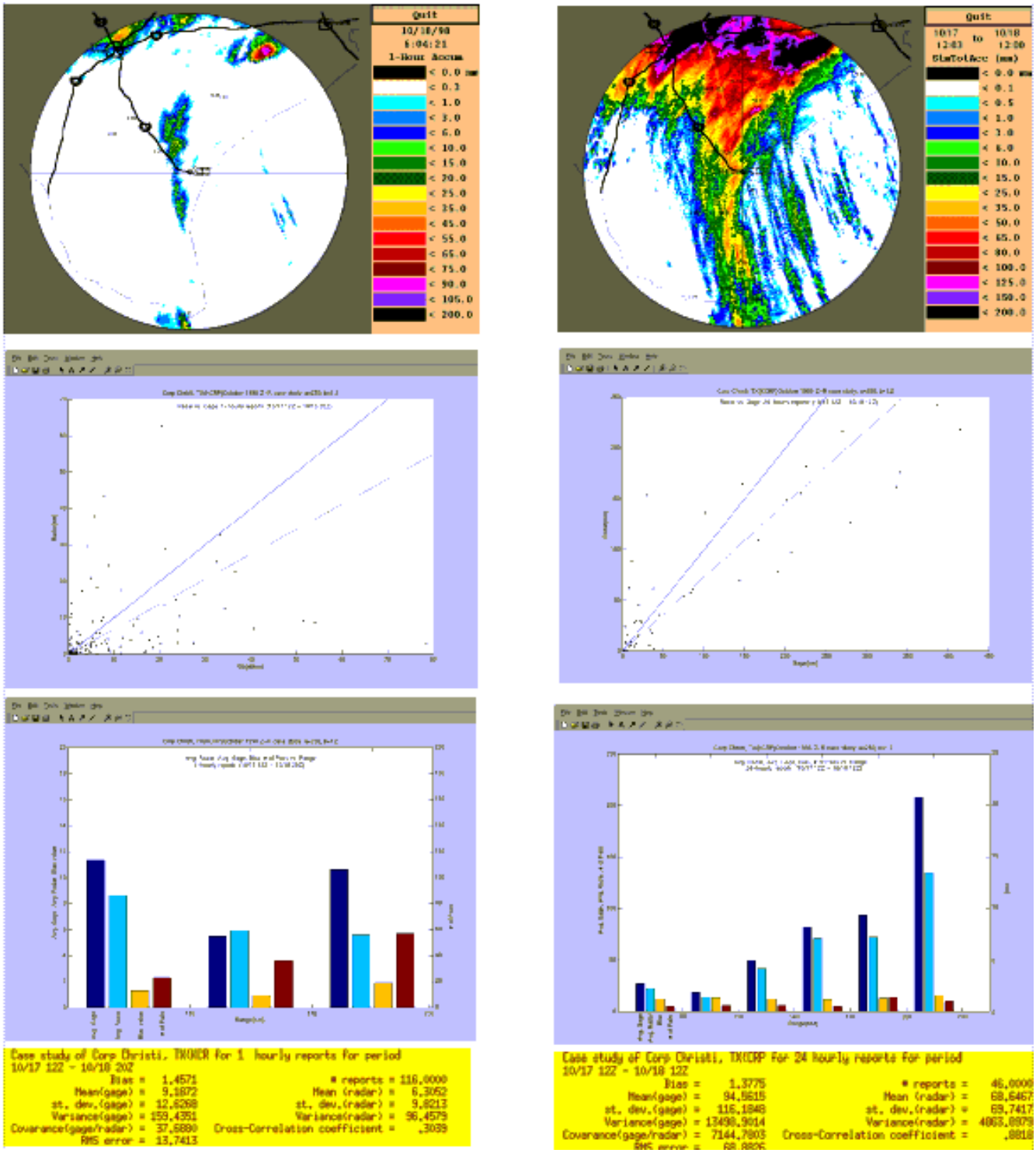
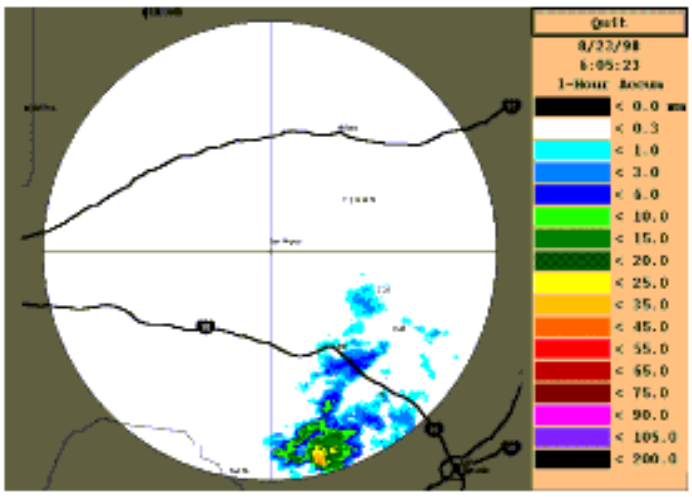


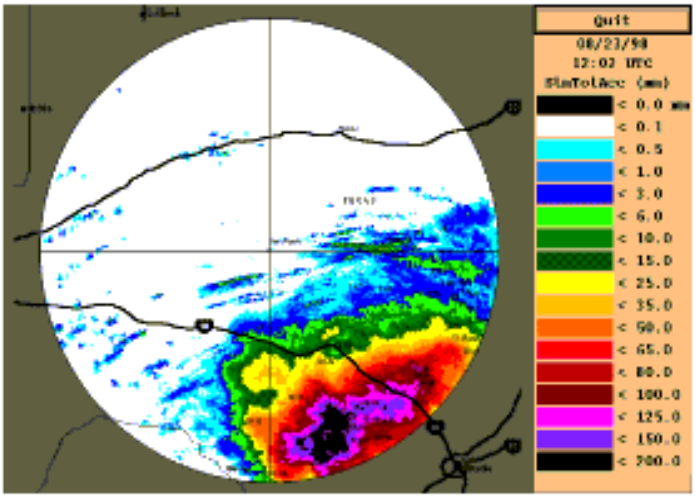
Fig. 2.5O.C: Overview of results from October 17-19 Corpus Christi (KCRP) simulation with Tropical Z-R (a=250; b=1.2) and Default Hail Cap threshold (103.8 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 10/17 12 UTC - 10/18 20 UTC); Right column: analysis of 24-hr G-R pairs ending 10/18 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 10/18/98 06 UTC); Right: STP for 24 hours); Gage (X) vs. Radar (Y) "Scatter Diagram"; Bias, Avg. Gage, Avg. Radar and # G-R Pairs vs. Range; Summary of Statistics for case. (all accum. units mm)

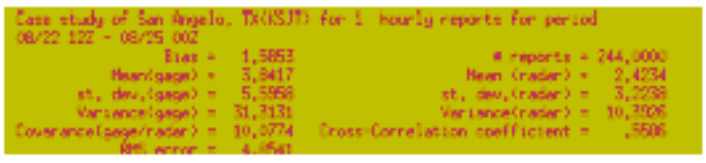
San Angelo, TX (SJT) 08/21-24/98: Tropical Z-R; Raised Hail Cap simulations

1-Hour Gage-Radar analyses

24-Hour Gage-Radar analyses







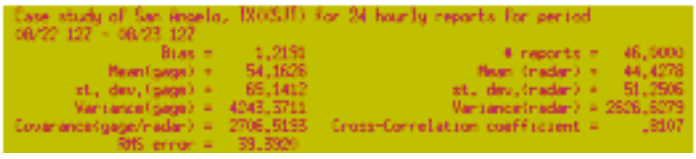
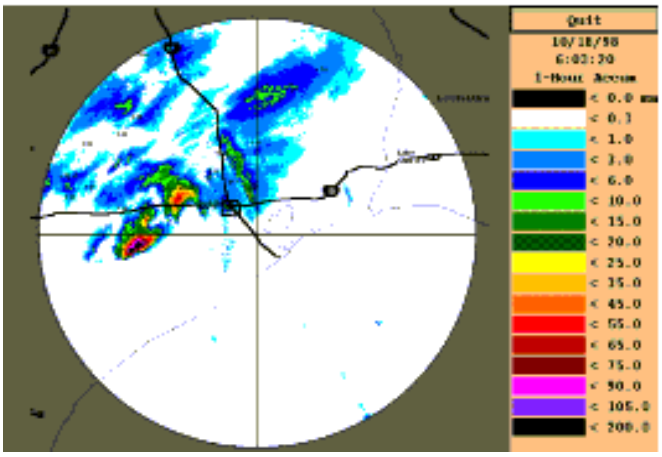


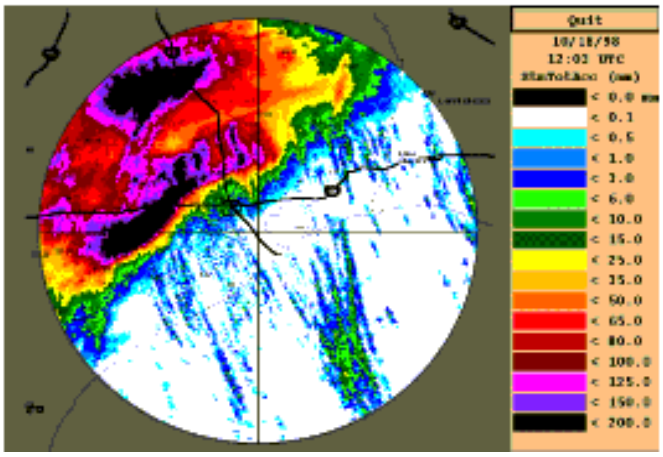
Fig. 2.6A.S: Overview of results from August 21-24 San Angelo (KSJT) simulation with Tropical Z-R (a=250; b=1.2) and Raised Hail Cap threshold (262.0 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 08/22 12 UTC - 08/25 00 UTC); Right column: analysis of 24-hr G-R pairs ending 08/23 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 08/23/98 06 UTC); Right: STP for 24 hours); Summary of Statistics for case. (all accum. units mm)

Houston, TX (HGX) 10/17-19/98: Tropical Z-R; Raised Hail Cap simulations

1-Hour Gage-Radar analyses



24-Hour Gage-Radar analyses



Case study of Houston, TX(KHGX) for 1 hourly reports for period
10/17 12Z - 10/19 00Z

Bias =	1.7931	# reports =	396.0000
Mean(gage) =	10.8448	Mean (radar) =	6.0480
st. dev.(gage) =	15.4152	st. dev.(radar) =	9.7153
Variance(gage) =	237.6270	Variance(radar) =	94.3864
Covarance(gage/radar) =	112.2219	Cross-Correlation coefficient =	.7493
RMS error =	11.4271		

Case study of Houston, TX(KHGX) for 24 hourly reports for period
10/17 12Z - 10/18 12Z

Bias =	1.5704	# reports =	40.0000
Mean(gage) =	100.5207	Mean (radar) =	69.1070
st. dev.(gage) =	100.0022	st. dev.(radar) =	66.9060
Variance(gage) =	10000.4395	Variance(radar) =	4407.2354
Covarance(gage/radar) =	5454.1909	Cross-Correlation coefficient =	.8142
RMS error =	71.6475		

Fig. 2.6O.H: Overview of results from October 17-19 Houston (KHGX) simulation with Tropical Z-R (a=250; b=1.2) and Raised Hail Cap threshold (262.0 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 10/12 12UTC - 10/19 00UTC); Right column: analysis of 24-hr G-R pairs ending 10/18 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 10/18/98 06 UTC); Right: STP for 24 hours); Summary of Statistics for case. (all accum. units mm)

Houston, TX (HGX) 10/17-19/98: "Best" Z-R; Default Hail Cap simulations

1-Hour Gage-Radar analyses

24-Hour Gage-Radar analyses

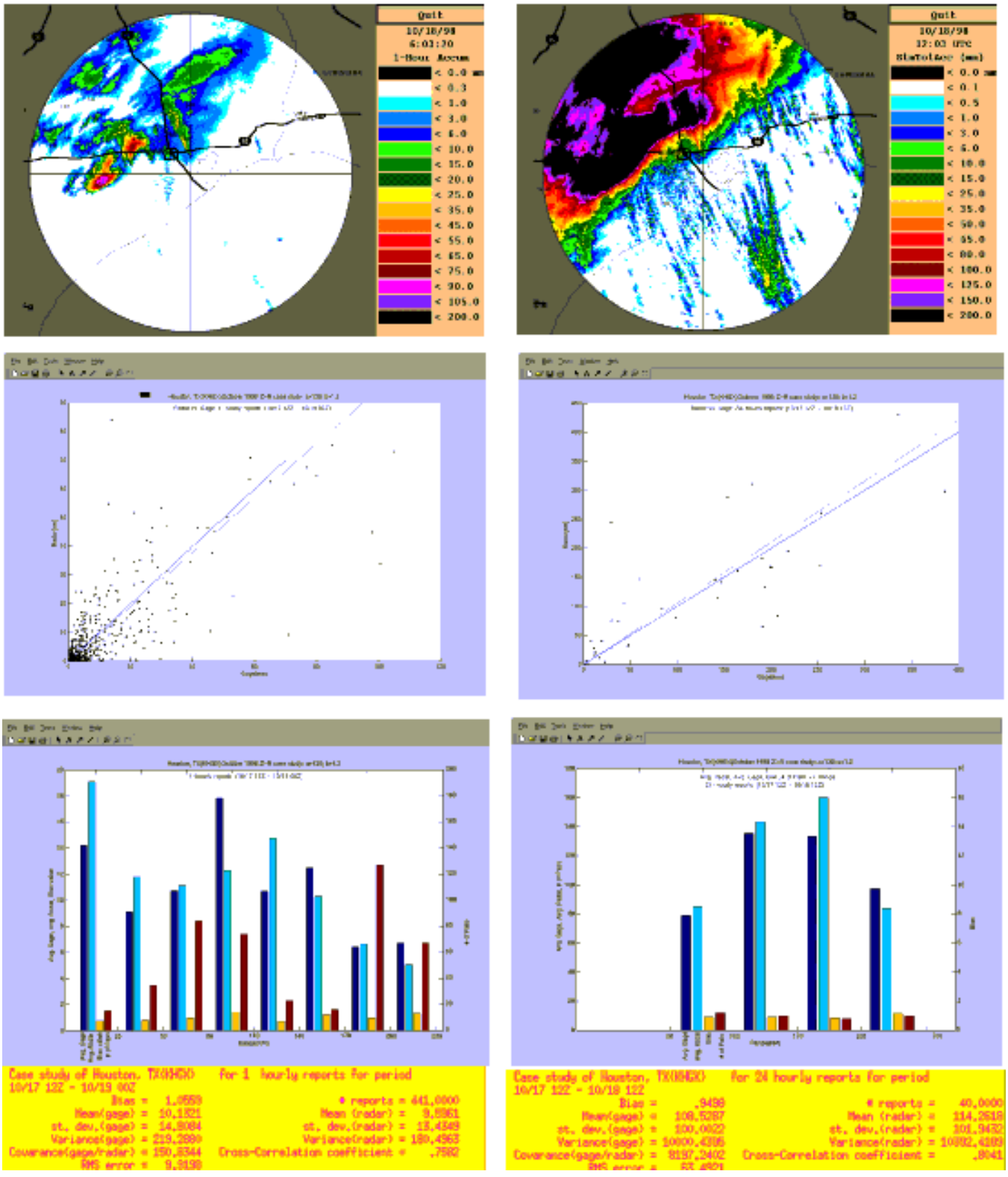


Fig. 2.7O.H: Overview of results from October 17-19 Houston (KHGX) simulation with "Best" Z-R (a=130; b=1.2) and Default Hail Cap threshold (103.8 mm/hr): Left column: analysis of all 1-hr G-R Pairs for duration of run (i.e., 10/17 12 UTC - 10/19 00 UTC); Right column: analysis of 24-hr G-R pairs ending 10/18 12 UTC. Top to bottom (both columns): Accumulation product with rain gage data for matching period superimposed (Left: OHP for indicative hour (i.e., ending 10/18/98 06 UTC); Right: STP for 24 hours); Gage (X) vs. Radar (Y) "Scatter Diagram"; Bias, Avg. Gage, Avg. Radar and # G-R Pairs vs. Range; Summary of Statistics for case. (all accum. units mm)