



National Transportation Safety Board

**Office of Aviation Safety
Washington, D.C. 20594-2000
April 18, 2017**

**ATTACHMENT 1 to the WEATHER STUDY
DCA16IA215**

Echo tops data provided by the Cooperative Institute for Mesoscale Meteorological Studies.

*Submitted by: Mike Richards
NTSB, AS-30*

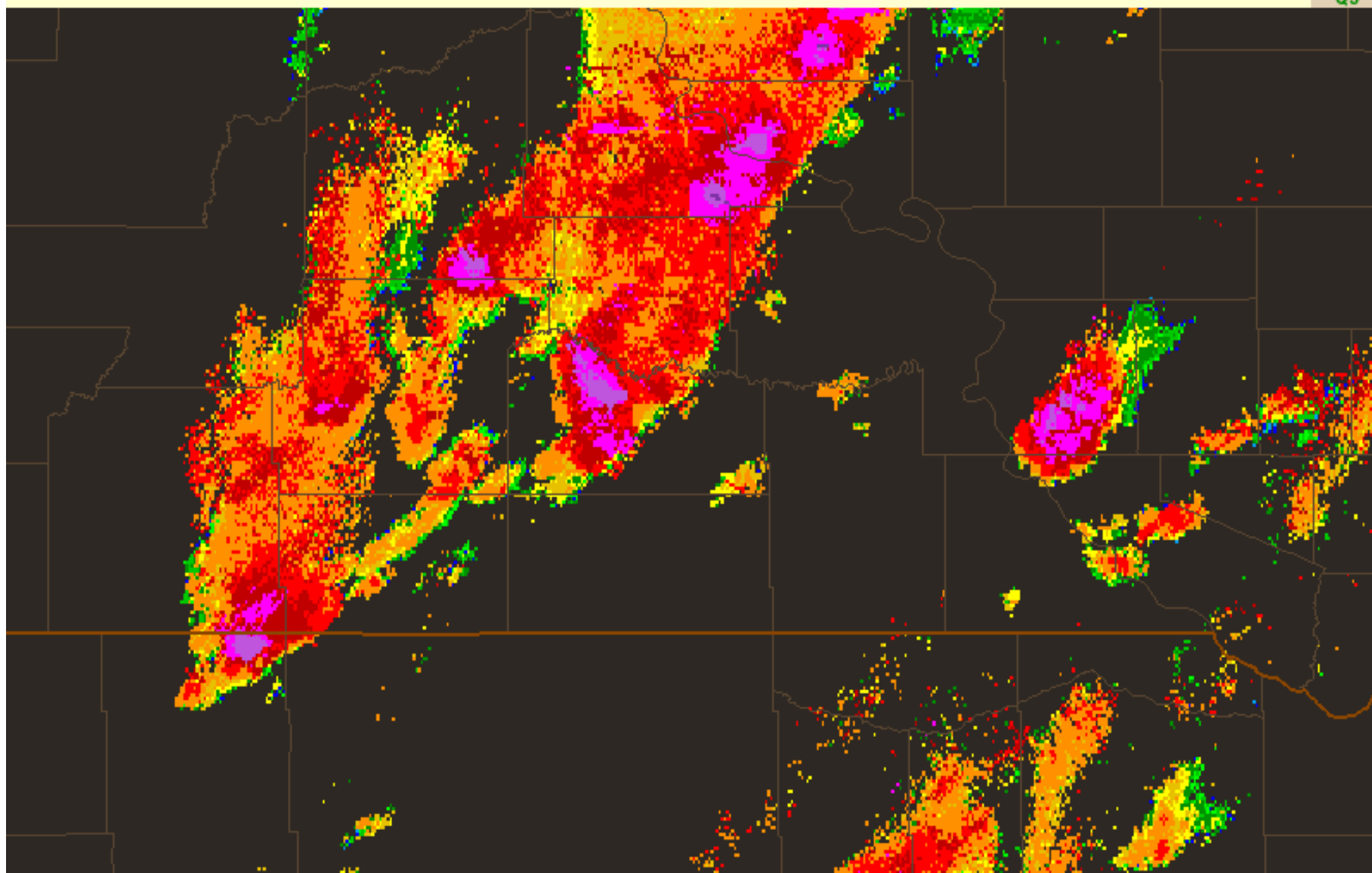
Echo Top Height [18 dBZ]

Derived From Mosaic3D

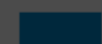
Valid: 08/12/2016 00:30:00 UTC



Q3



Max Height Of Echo Top >18 dBZ [km - MSL]



No File



Missing



44.75
-103.16 42.32 -97.840

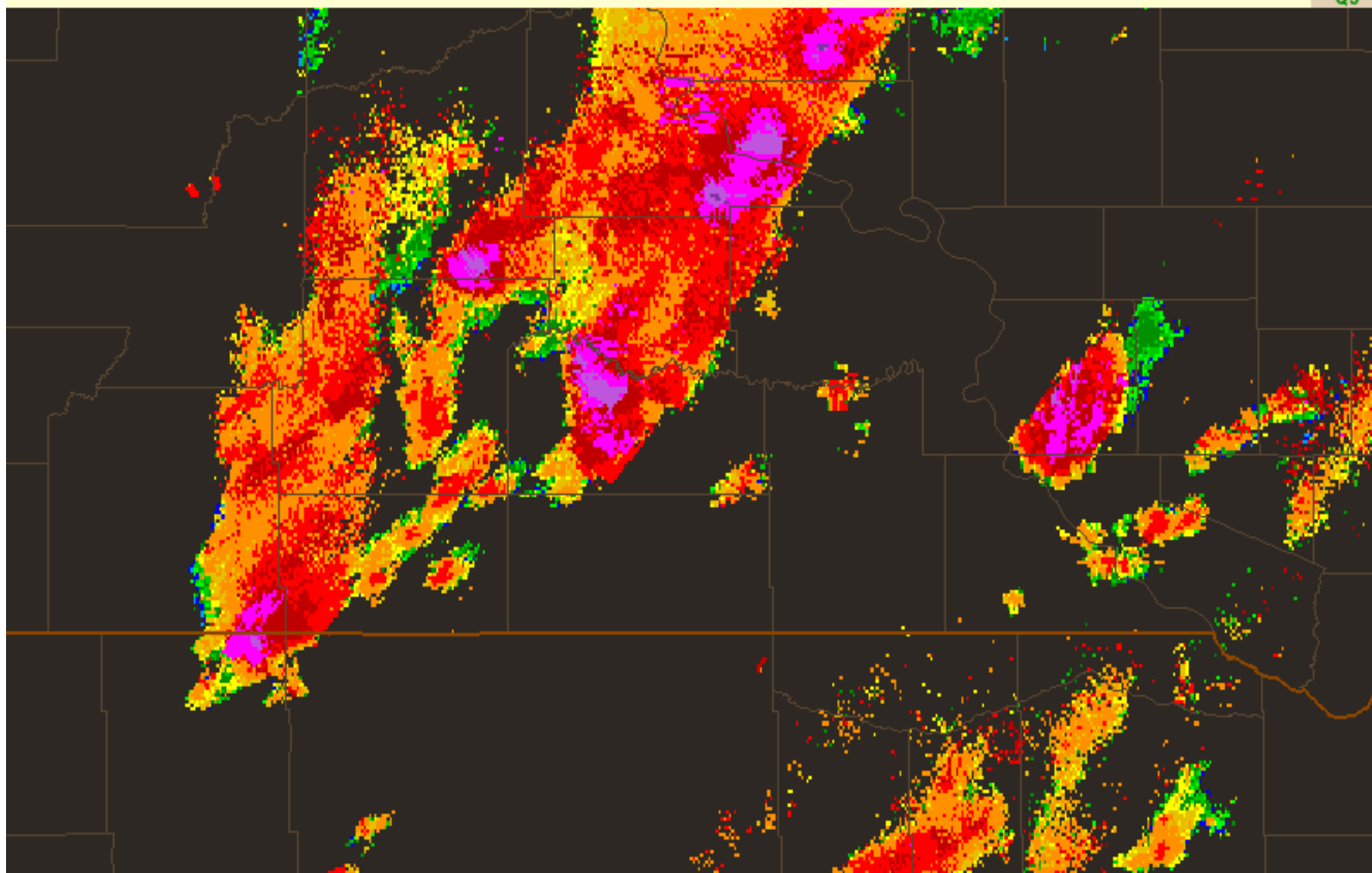
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:32:00 UTC

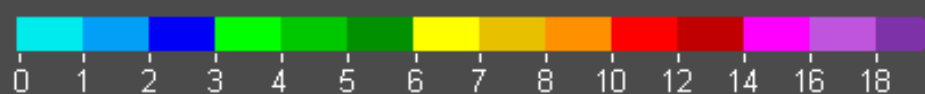


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

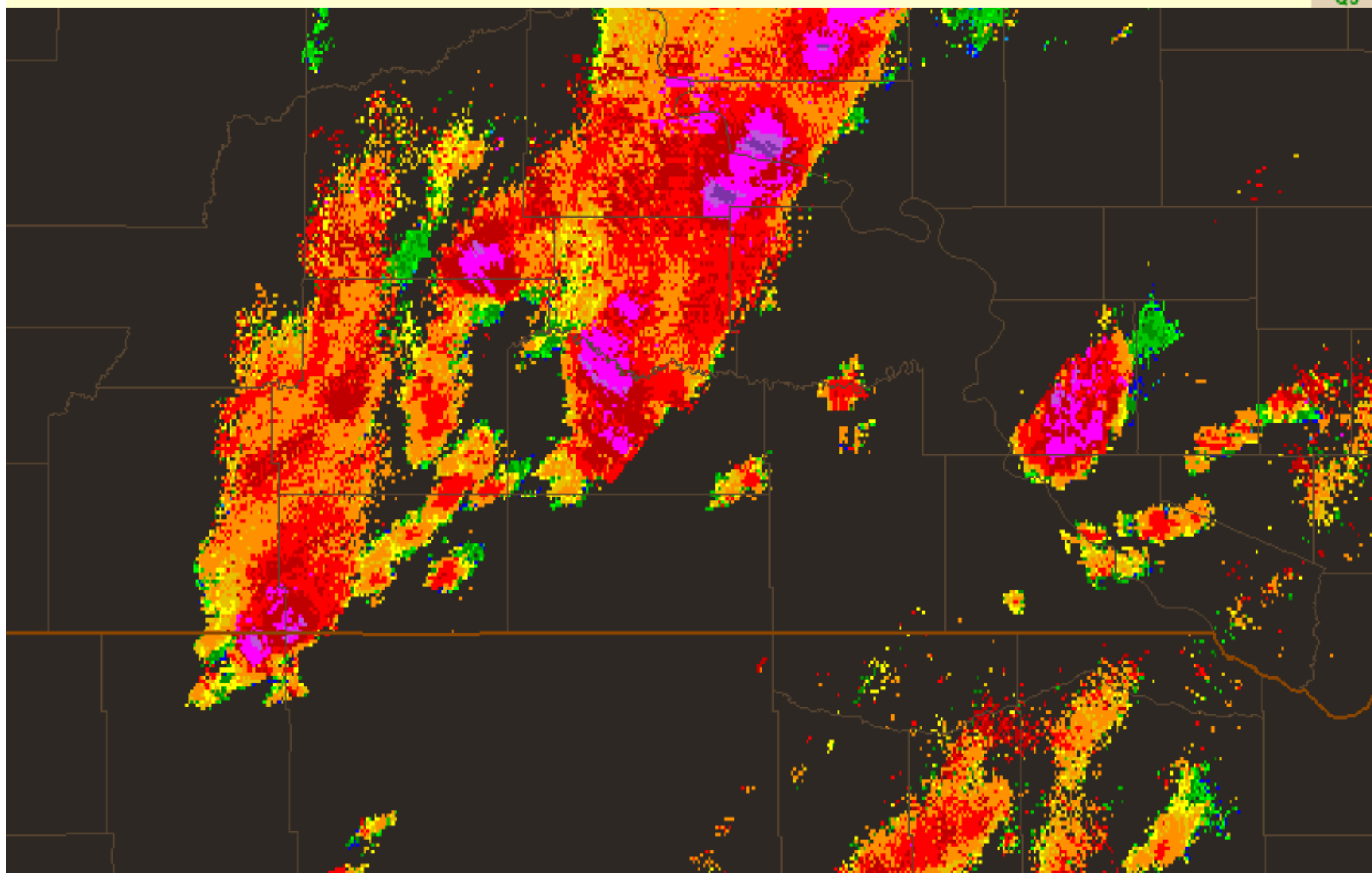
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:34:00 UTC

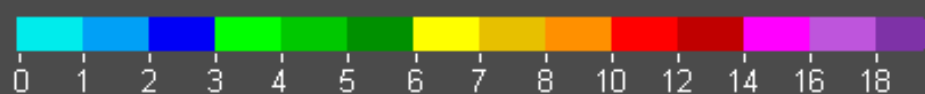


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

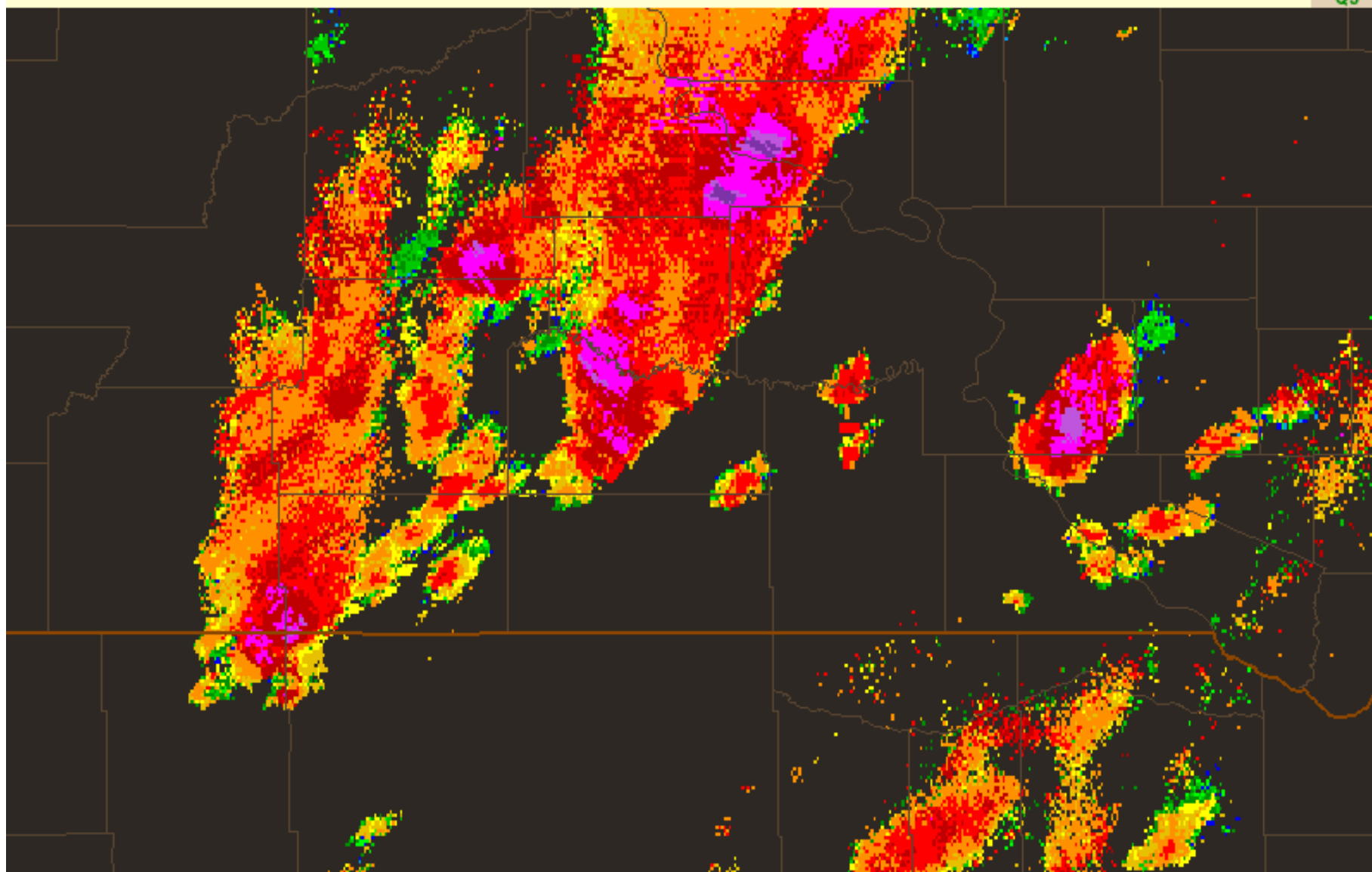
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:36:00 UTC

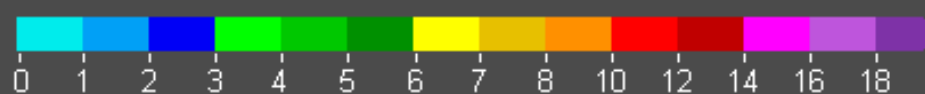


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

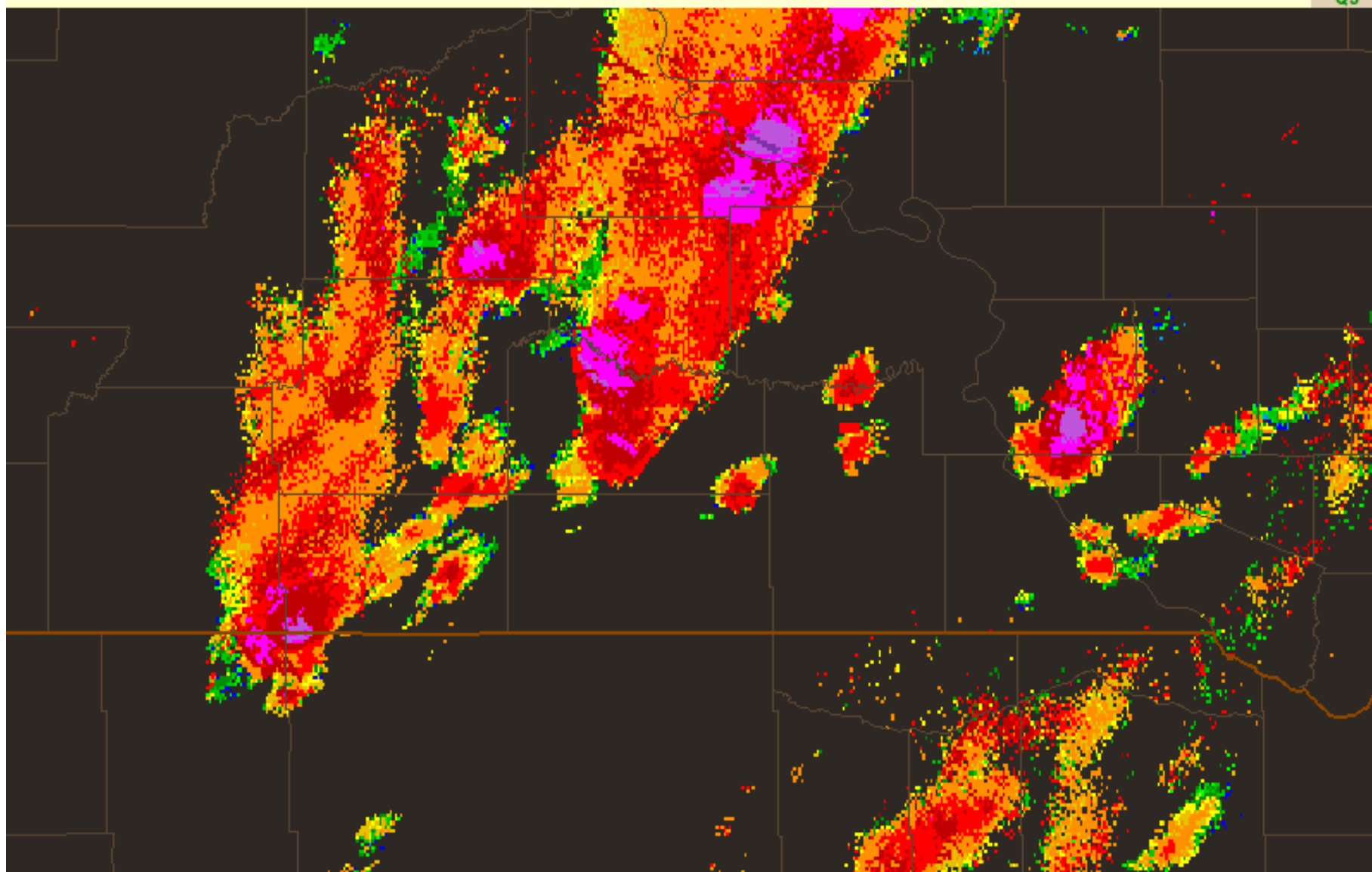
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:38:00 UTC

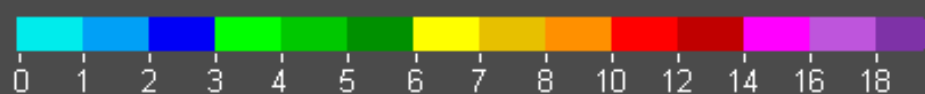


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

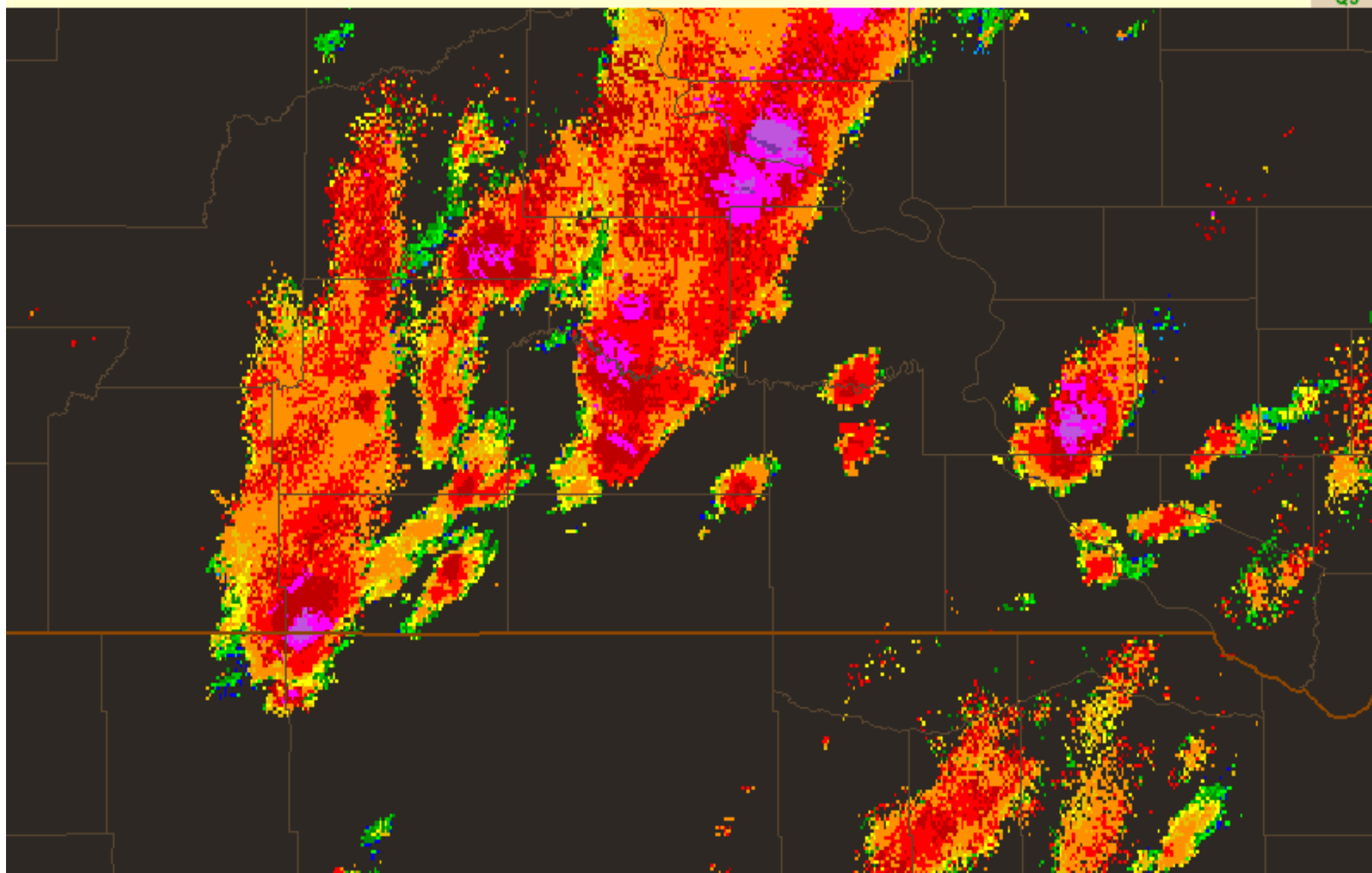
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:40:00 UTC

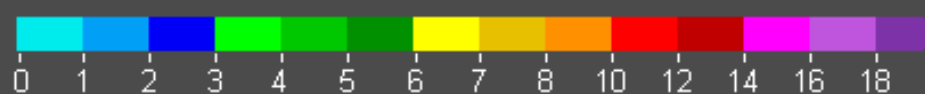


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

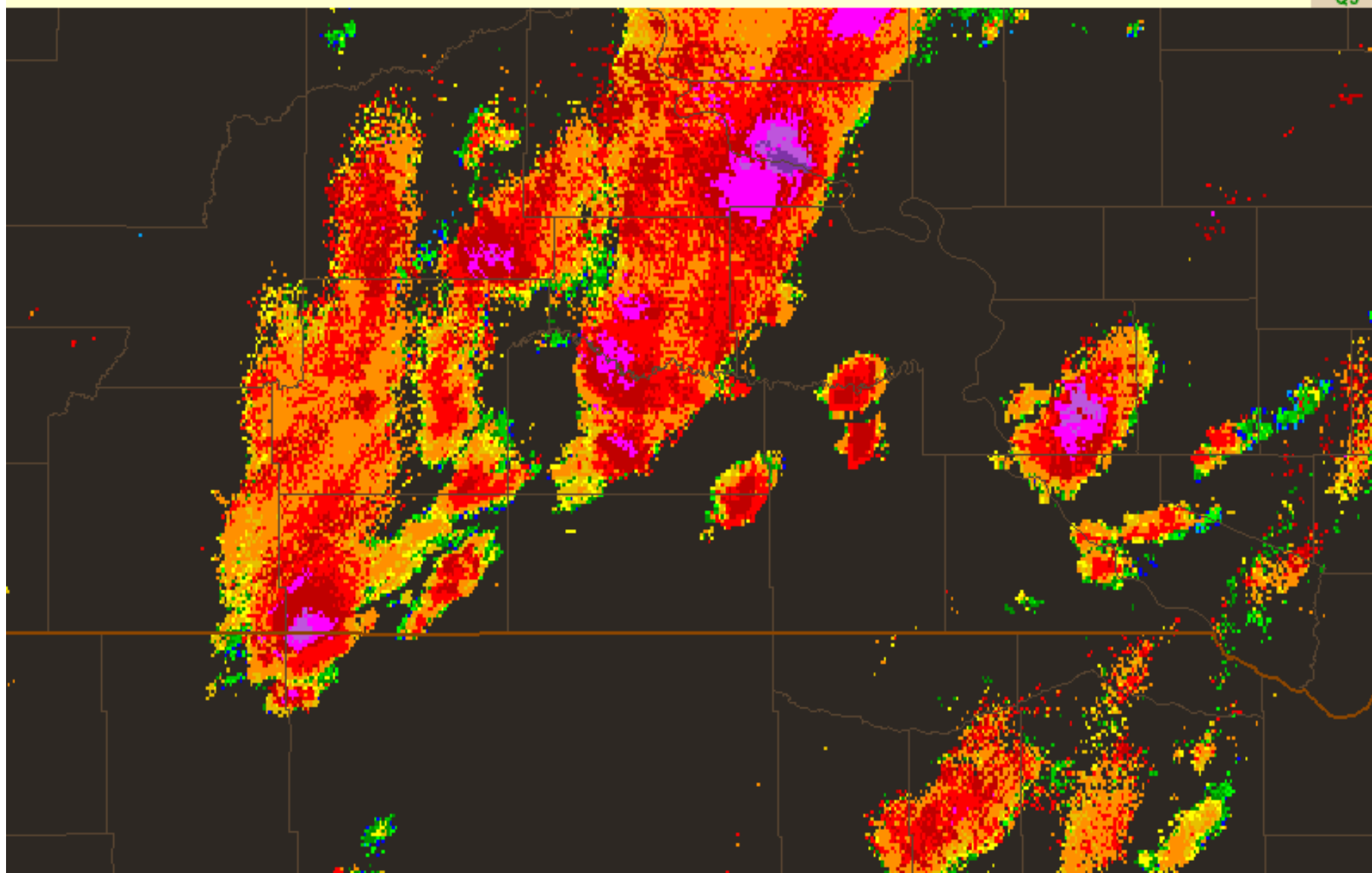
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:42:00 UTC

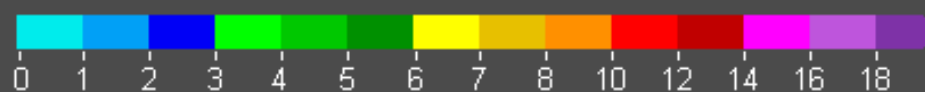


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

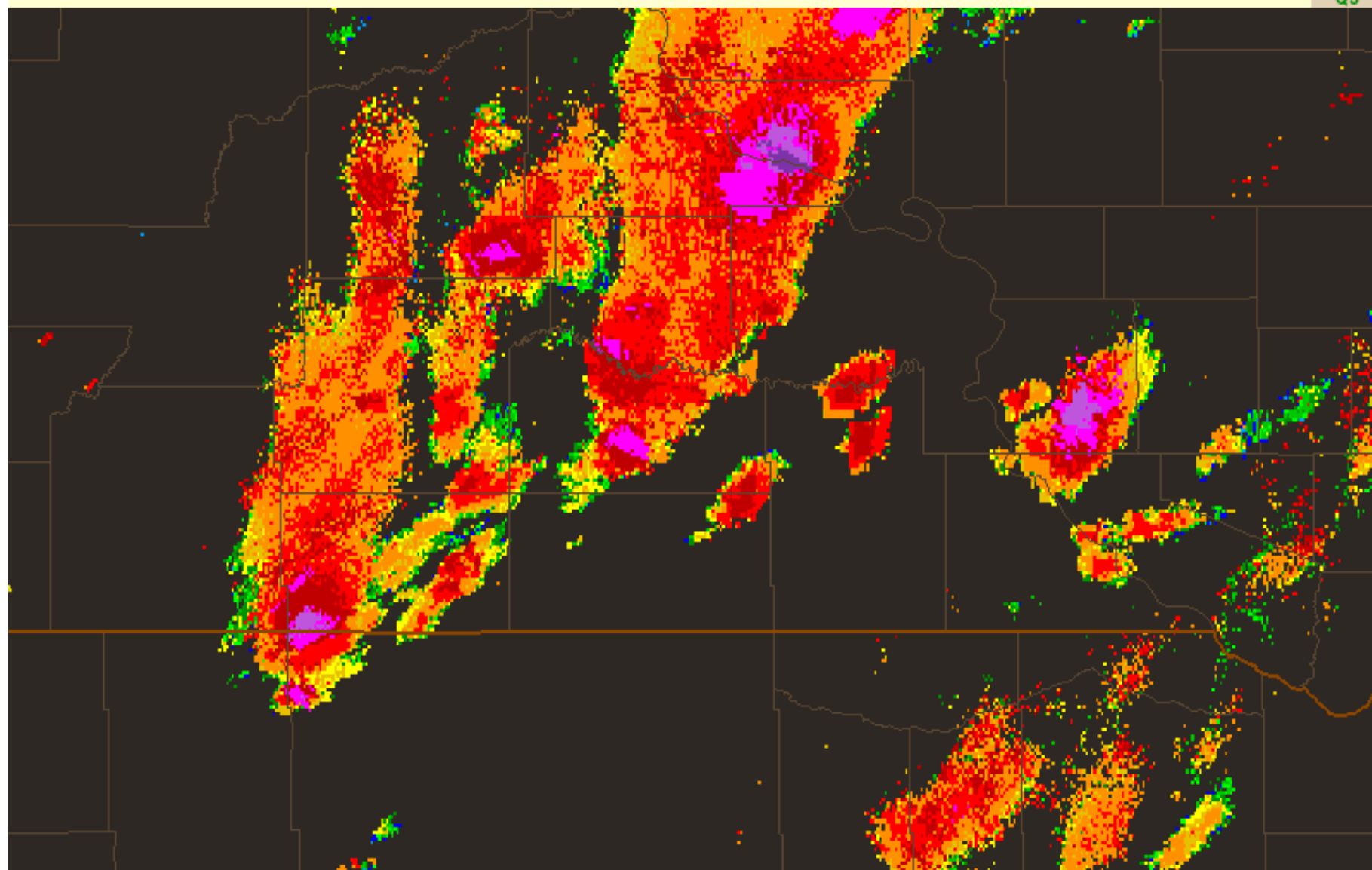
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:44:00 UTC

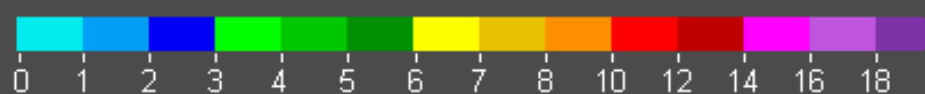


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

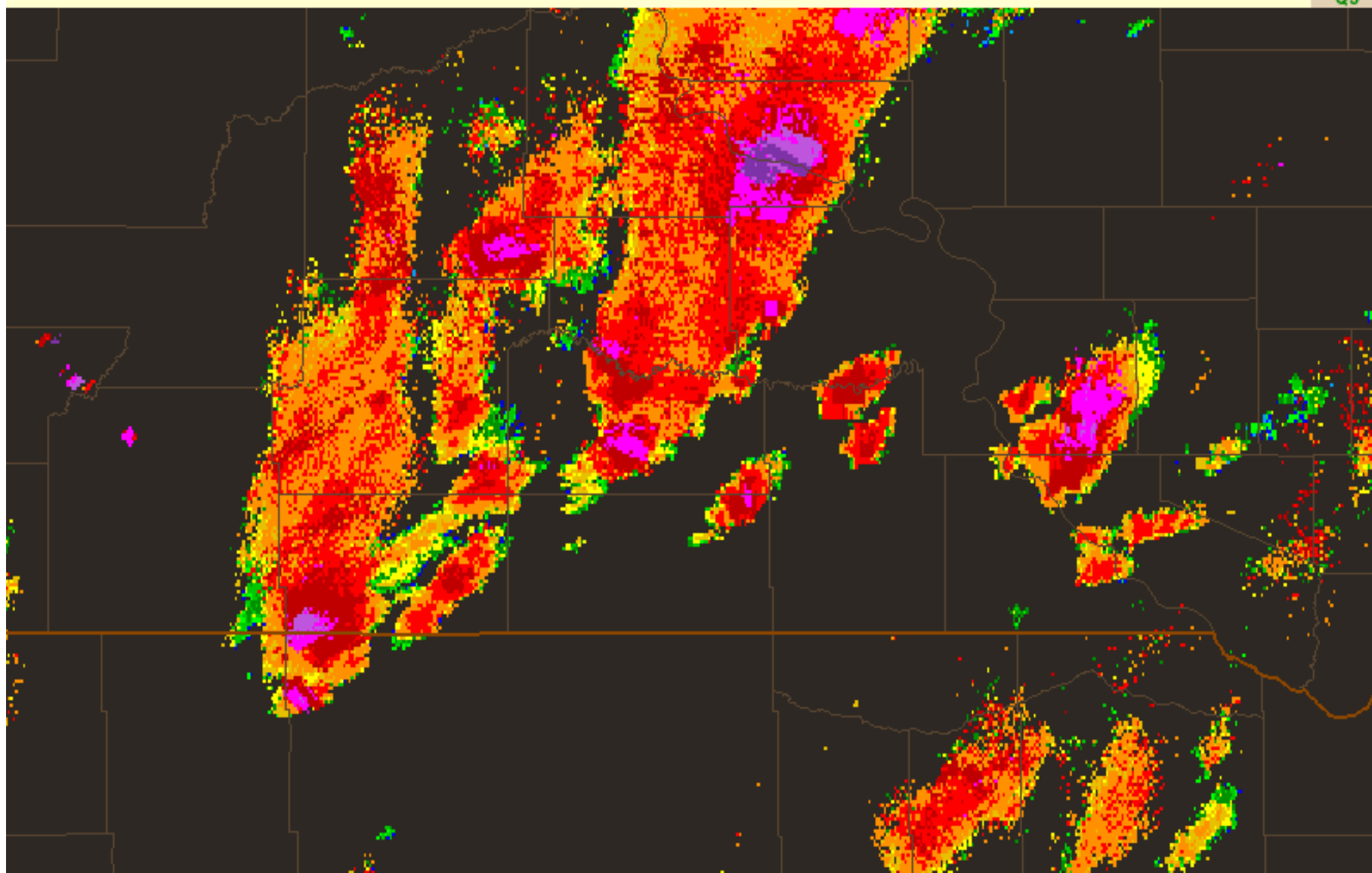
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:46:00 UTC

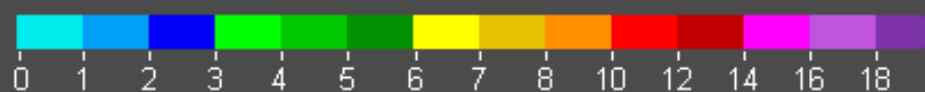


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

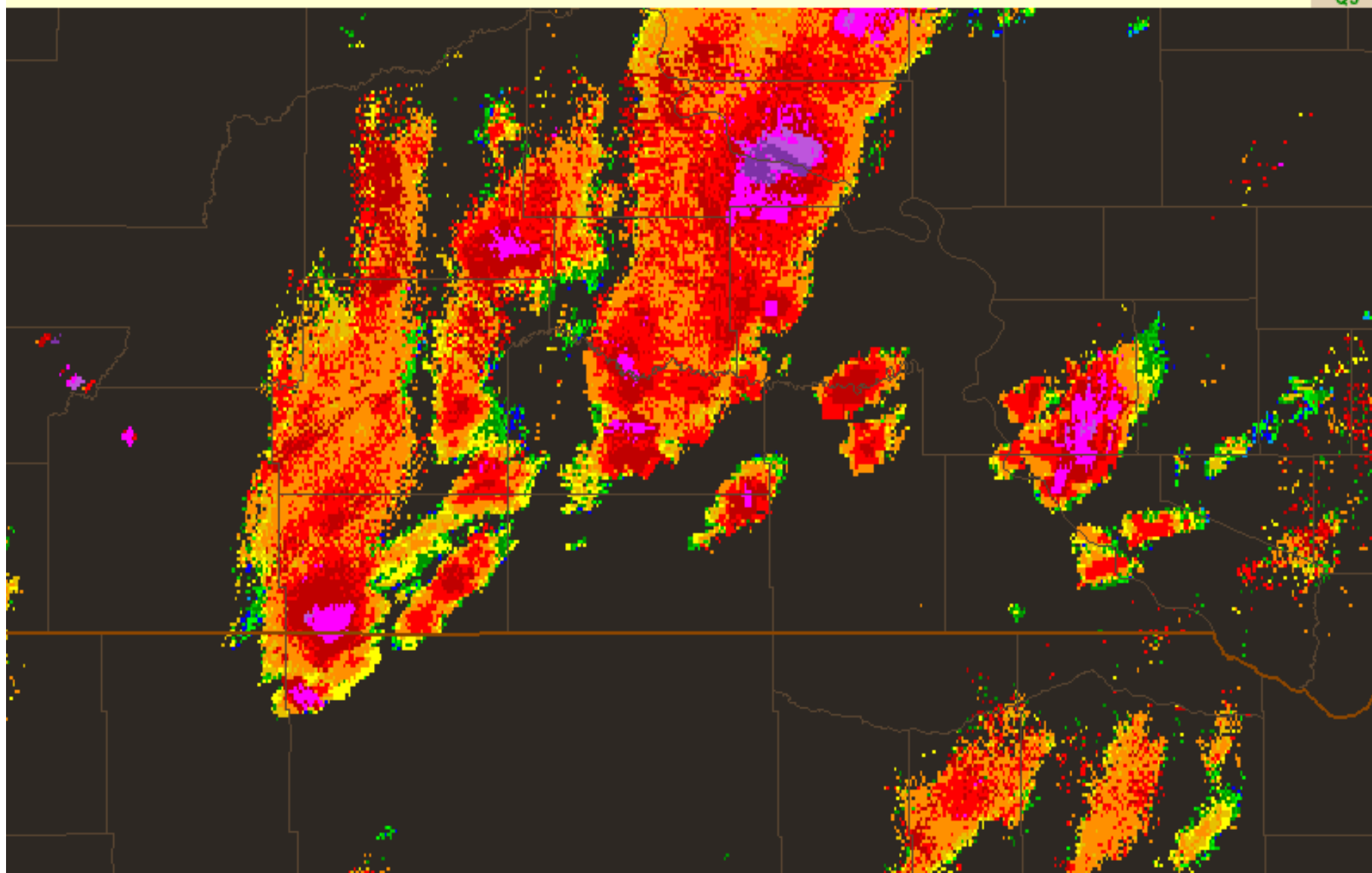
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:48:00 UTC

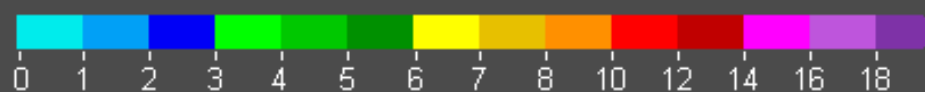


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

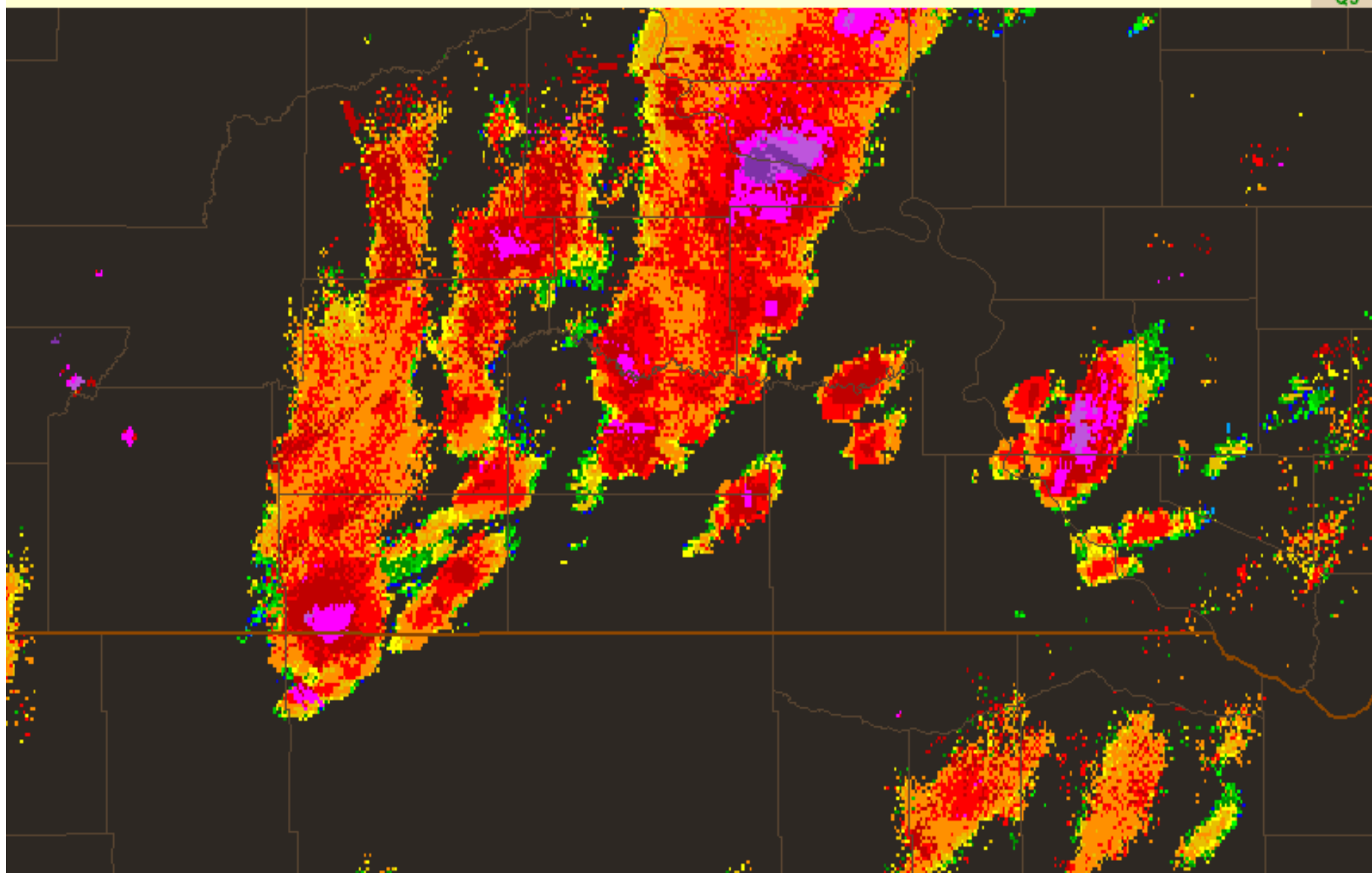
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:50:00 UTC

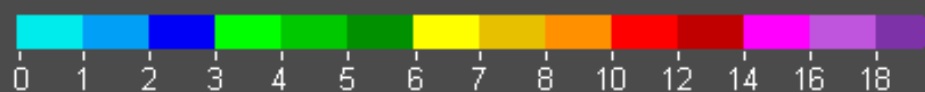


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

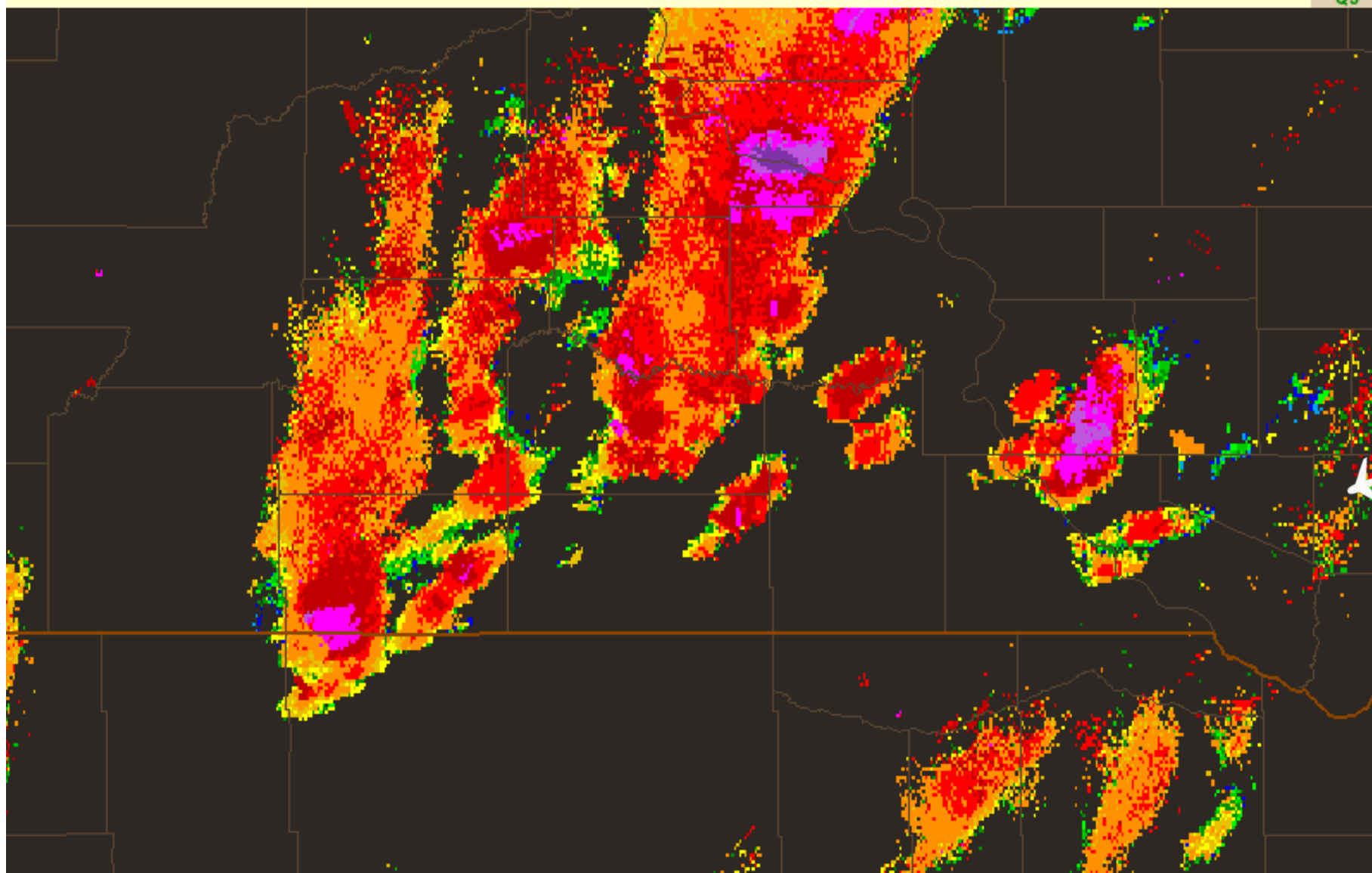
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:52:00 UTC

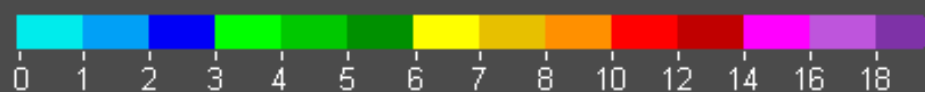


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

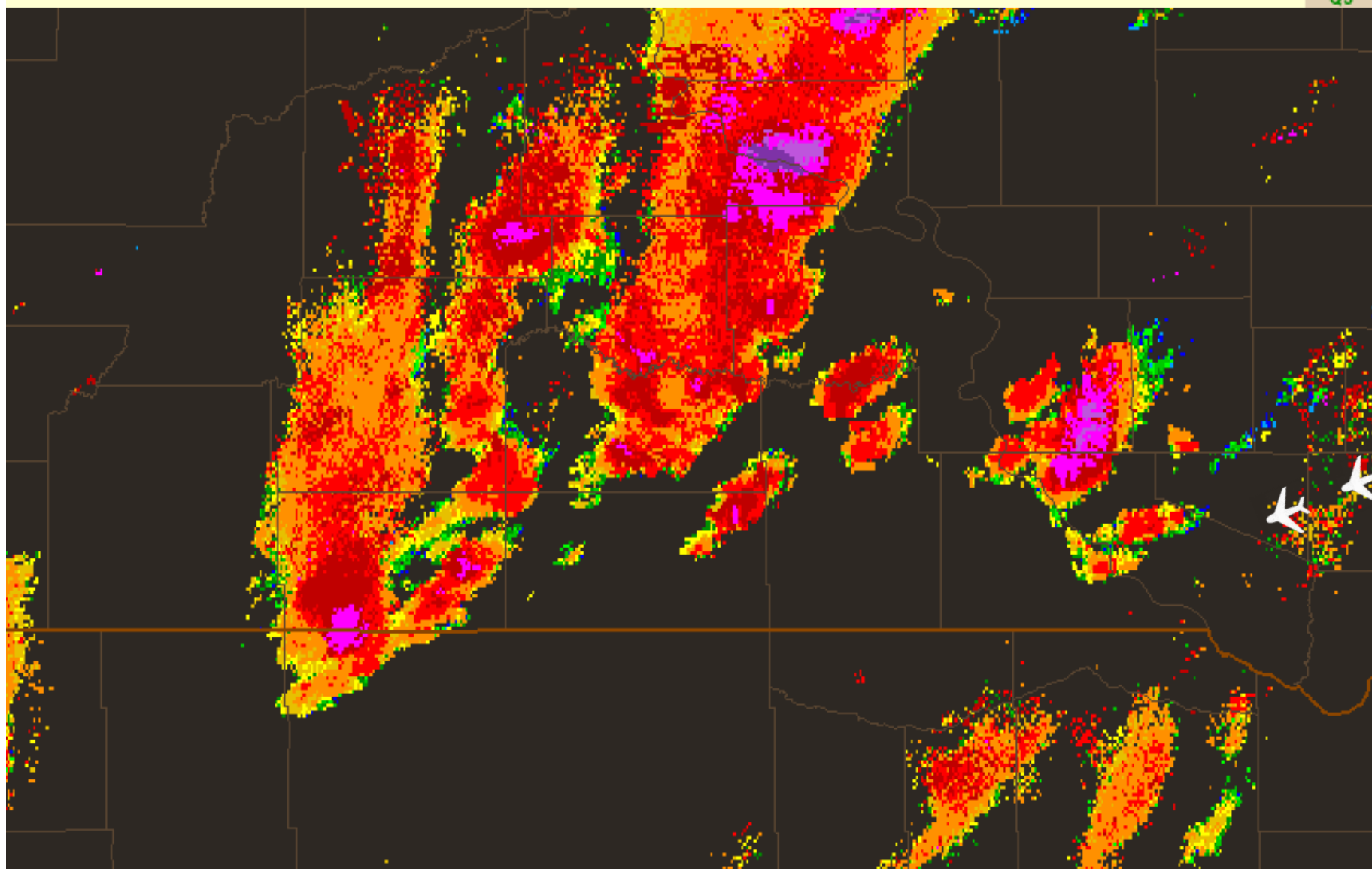
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:54:00 UTC

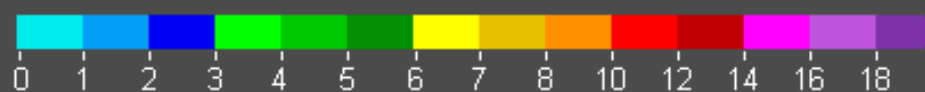


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

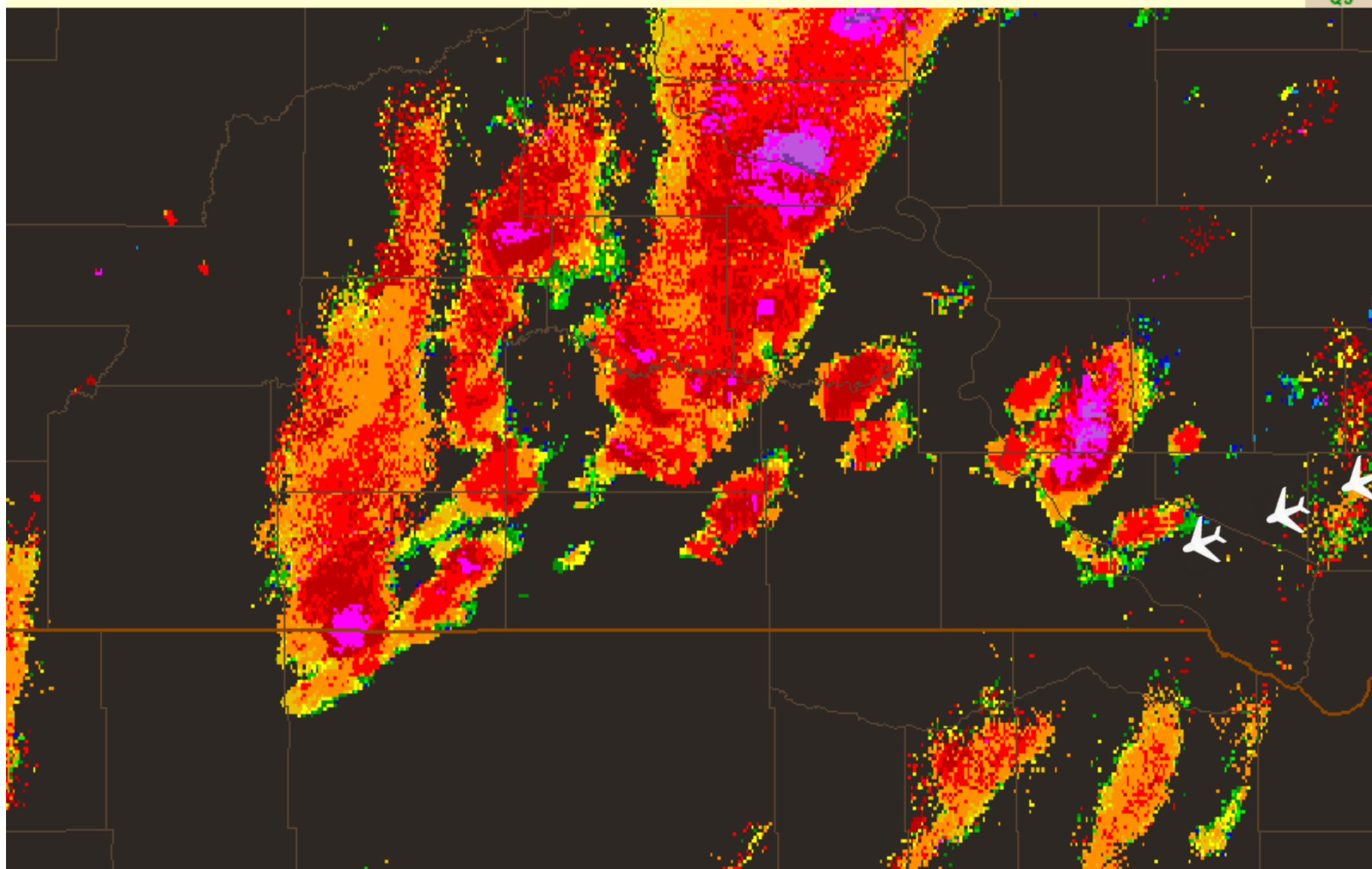
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:56:00 UTC

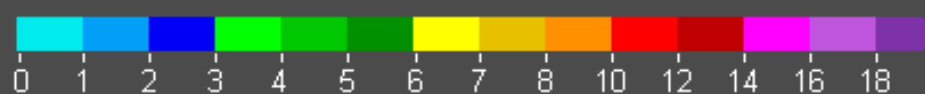


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

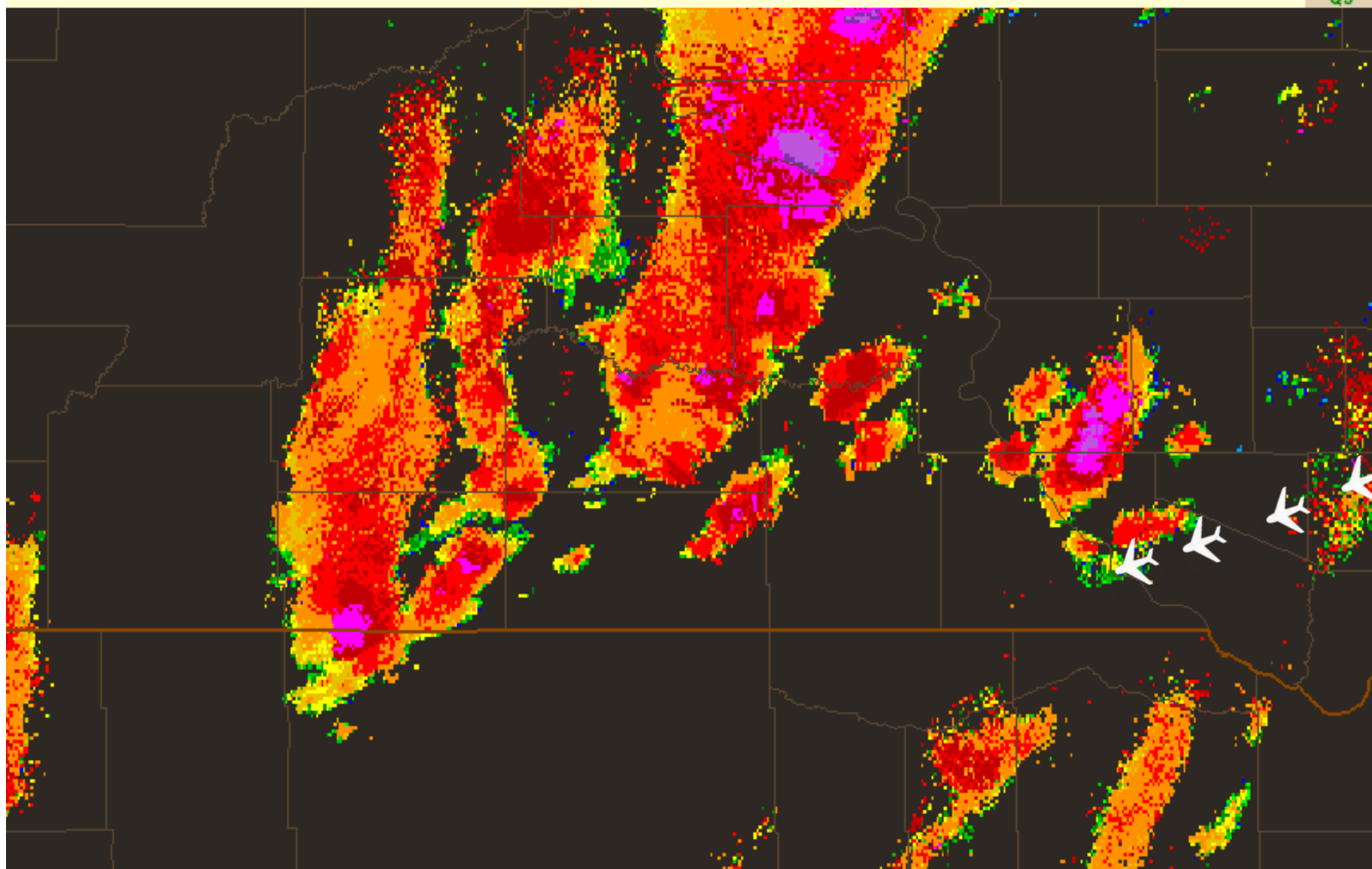
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 00:58:00 UTC

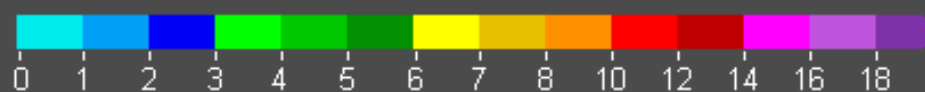


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

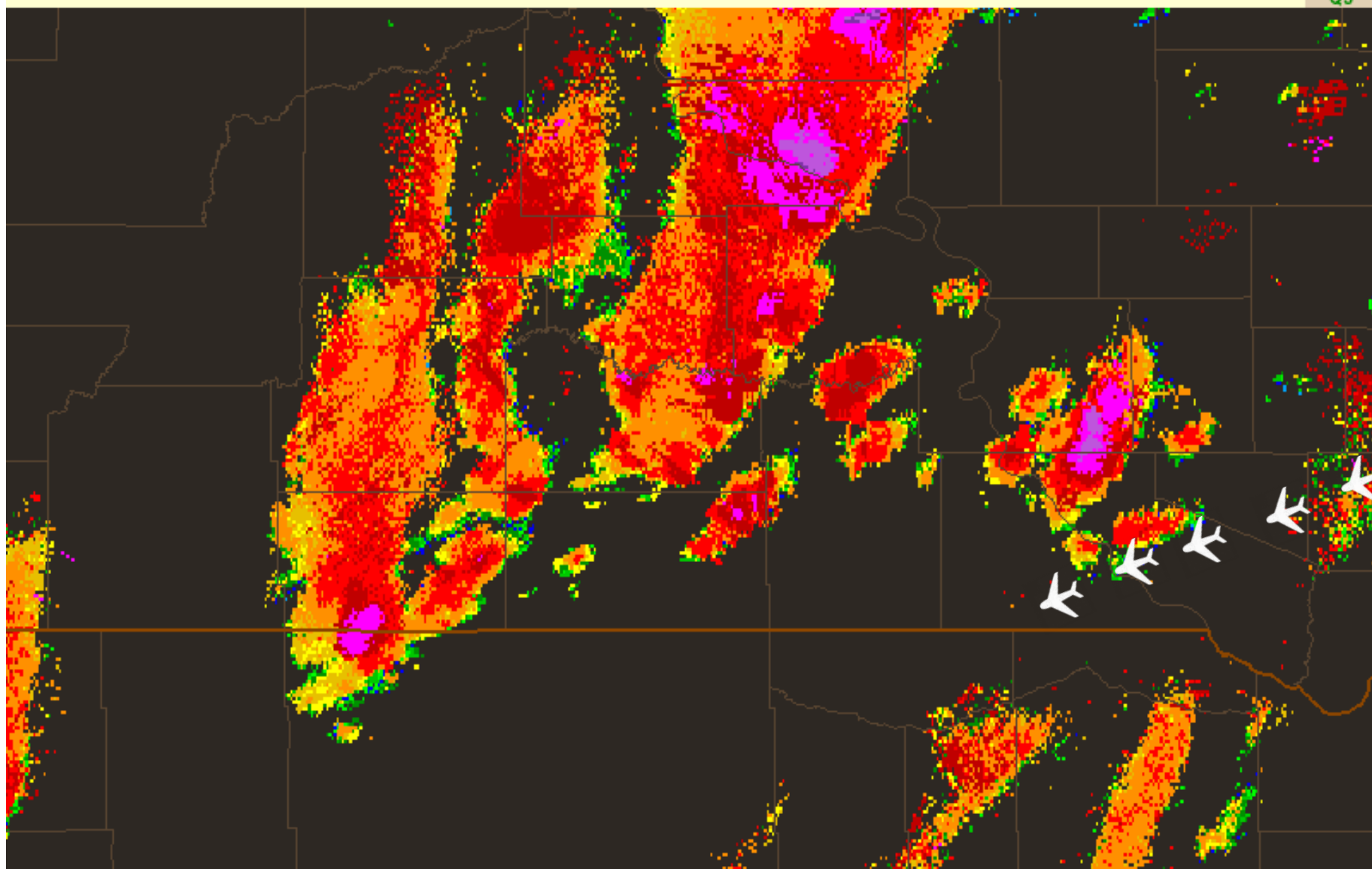
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 01:00:00 UTC

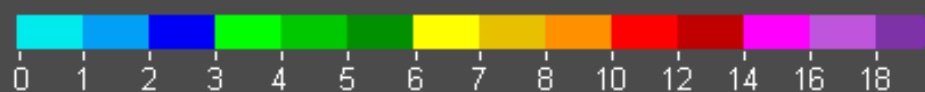


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

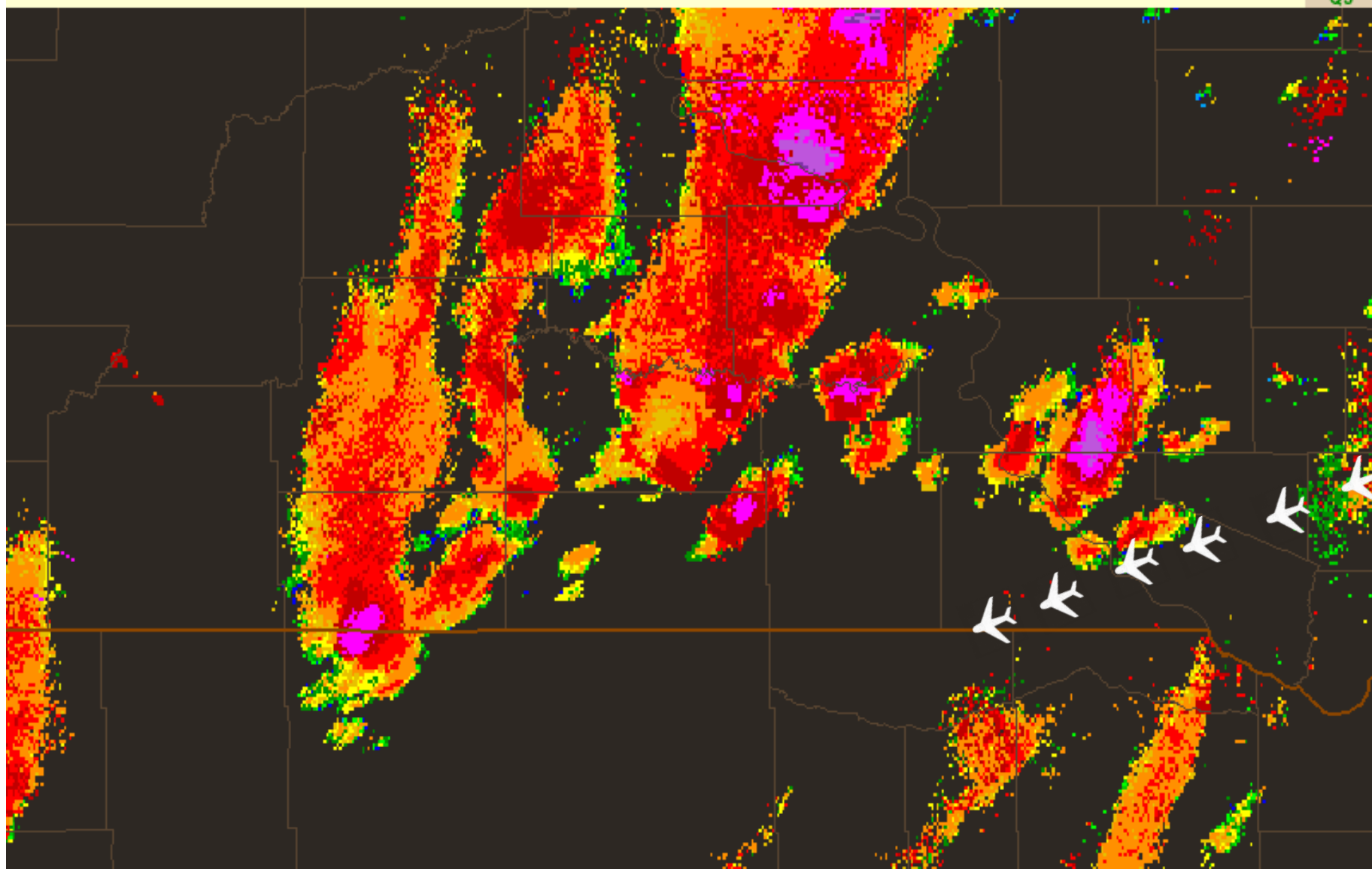
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 01:02:00 UTC



Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

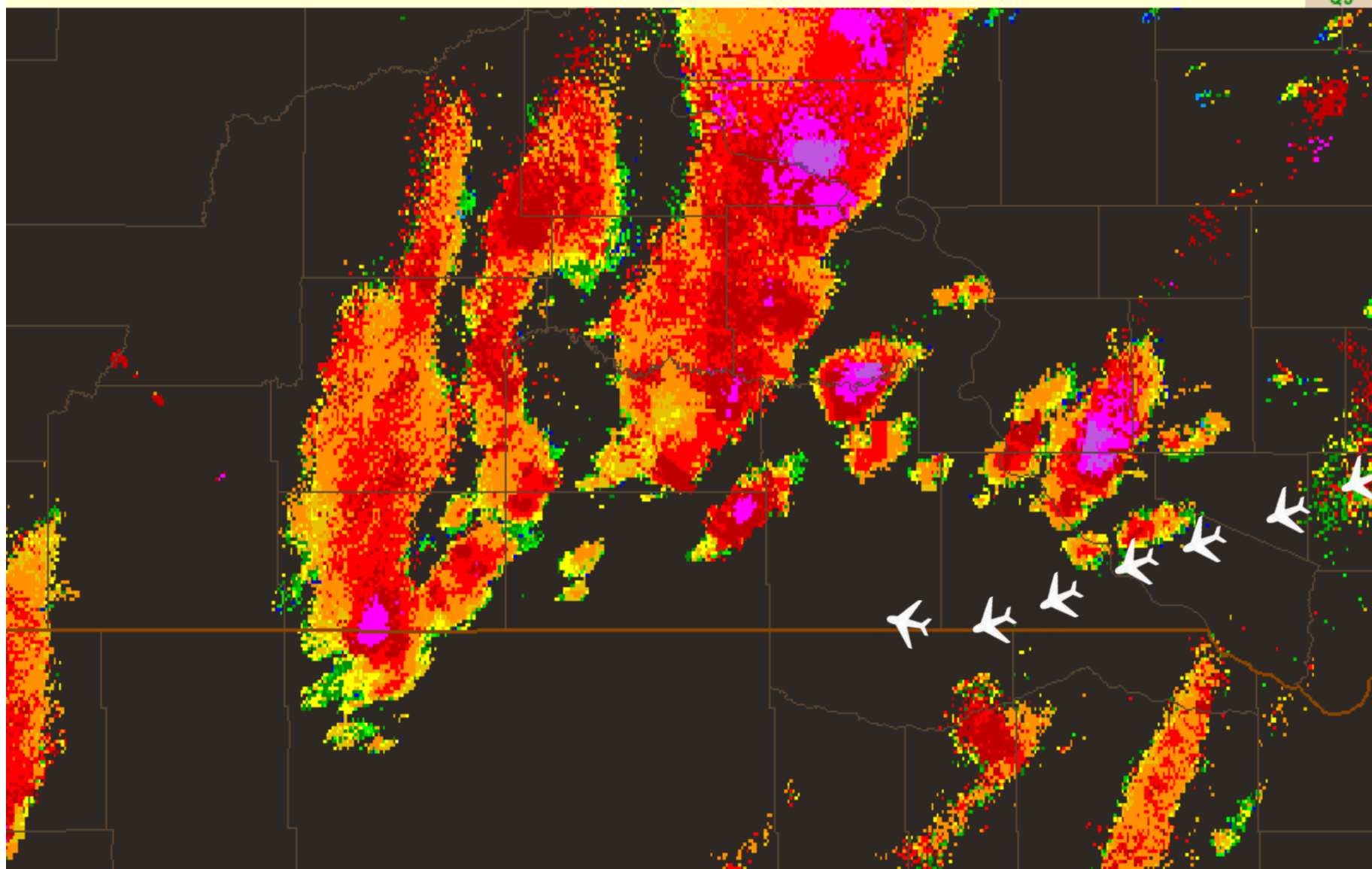
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 01:04:00 UTC



Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

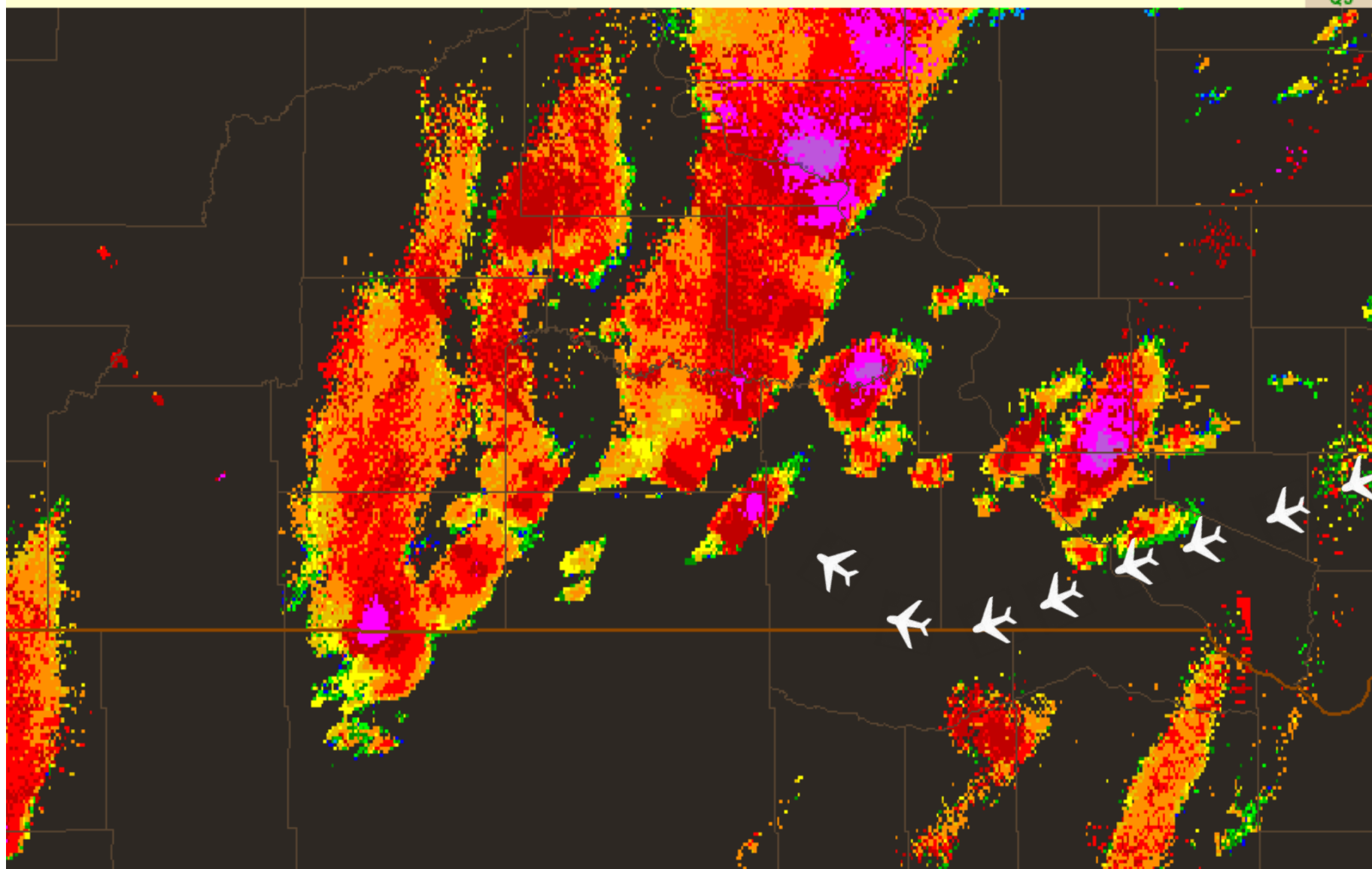
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 01:06:00 UTC



Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

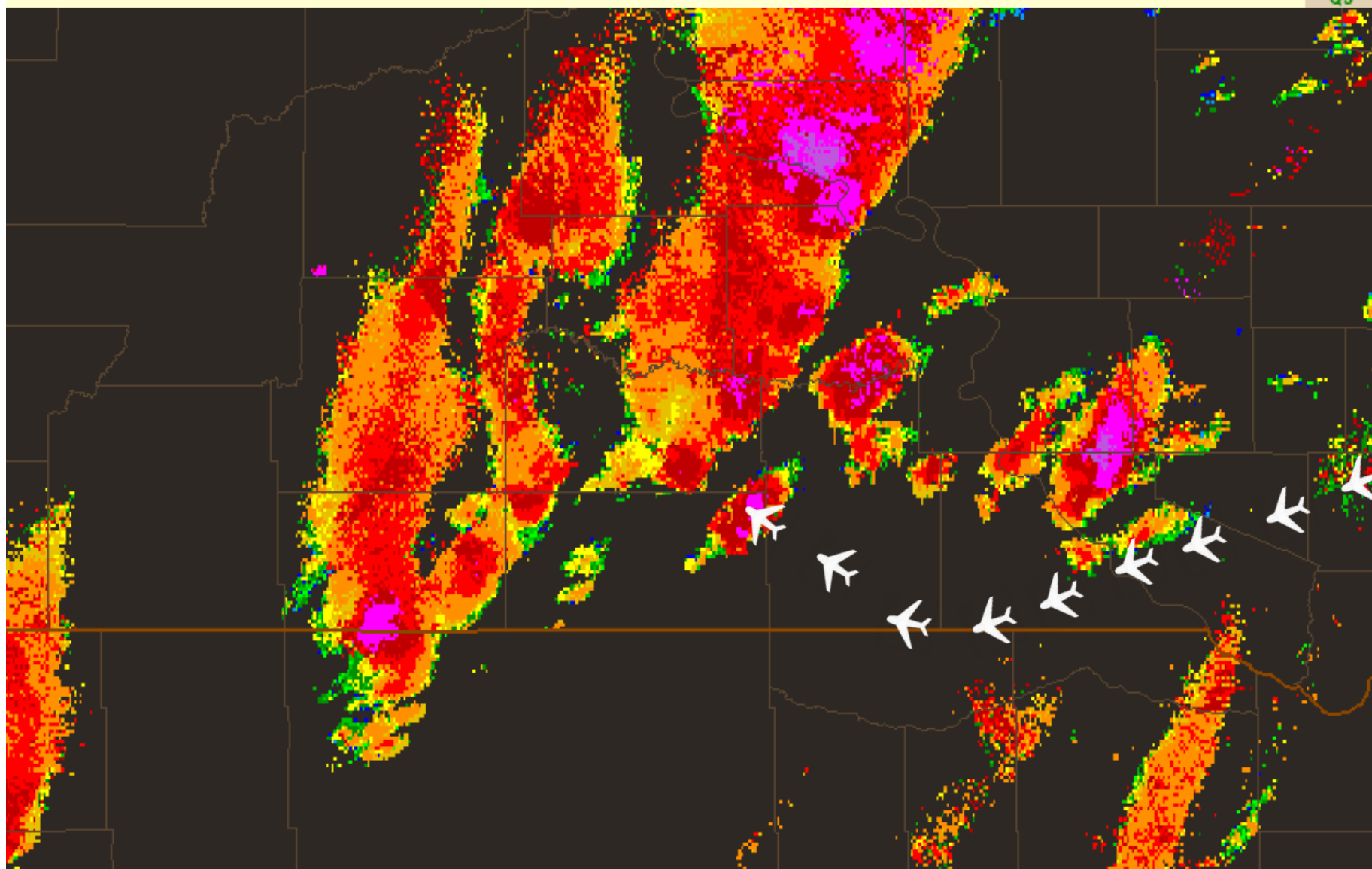
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 01:08:00 UTC

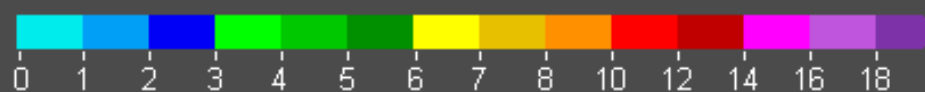


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32

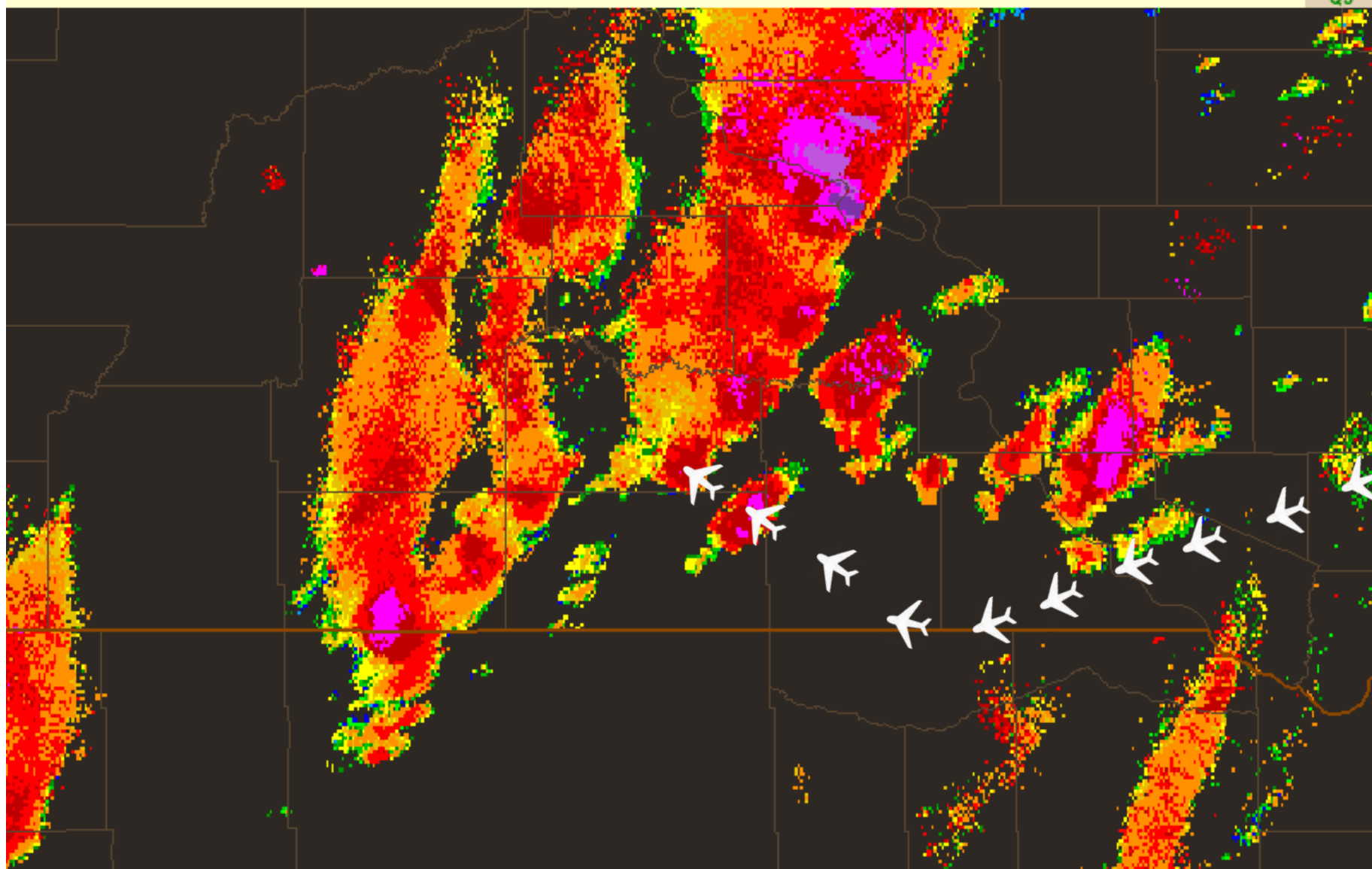
Echo Top Height [18 dBZ]

Derived From Mosaic3D

Valid: 08/12/2016 01:10:00 UTC

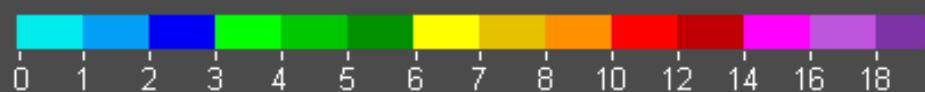


Q3



Max Height Of Echo Top >18 dBZ [km - MSL]

No File Missing



44.75
-103.16 -97.840
42.32