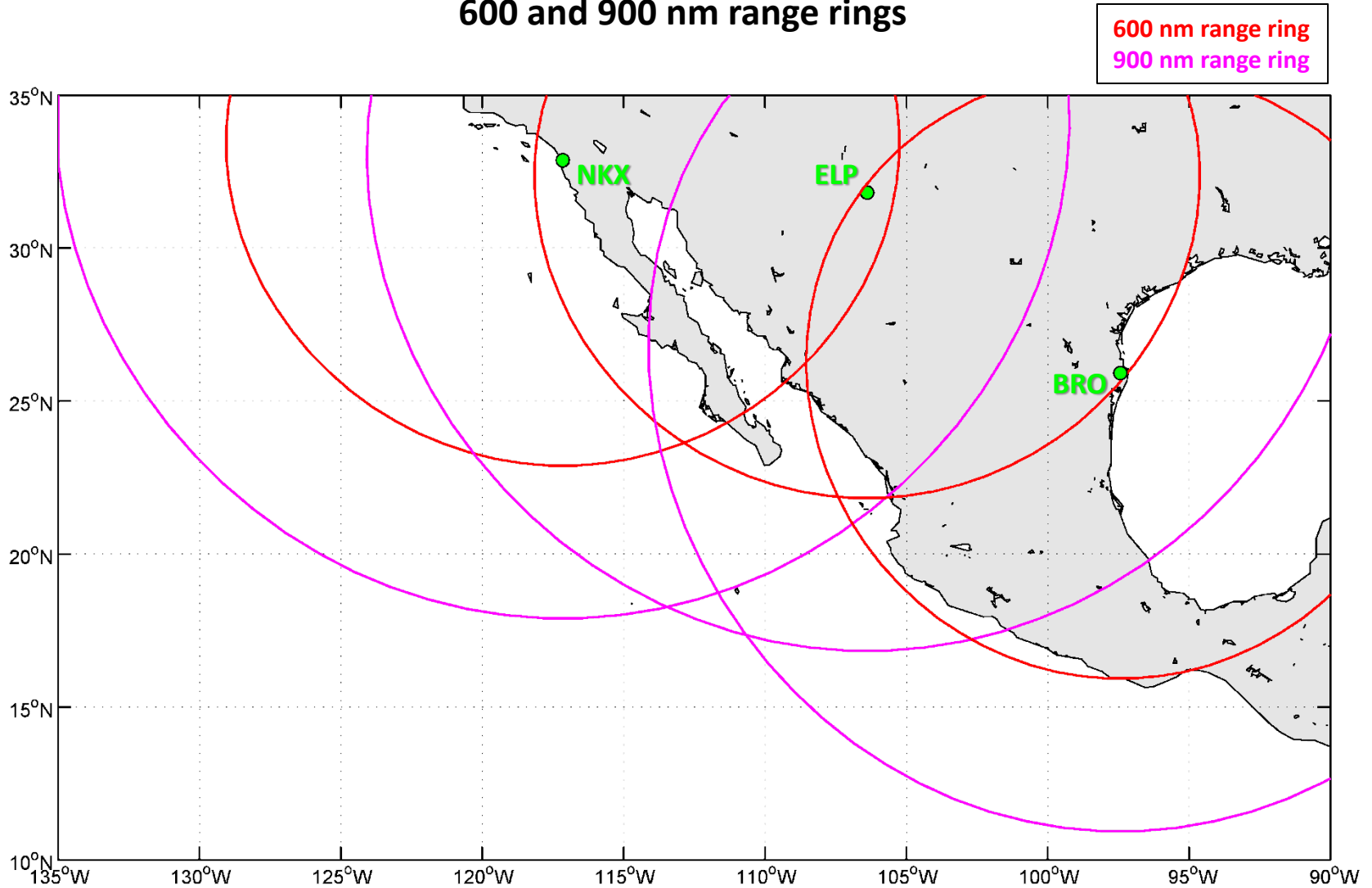


Eastern Pacific basin TC scenarios

- Here, we use historical TCs (2007-2014) to examine 3 prototypical scenarios for which a WB-57 flight from El Paso (ELP) to an East Pacific TC is feasible. The nature of the exercise is similar to that for the Atlantic.
- Range rings from Miramar (NKX) and Brownsville (BRO) are included for reference, but the discussion here assumes ELP is the forward operating base.
- Only storms from Mid Aug – Nov are considered

600 and 900 nm range rings



600 nm: A couple hours on-station time at feature of interest
900 nm: Out-and-back to feature of interest

Scenario #1: Late-season (Oct-Nov) recurving TC

Case Study:

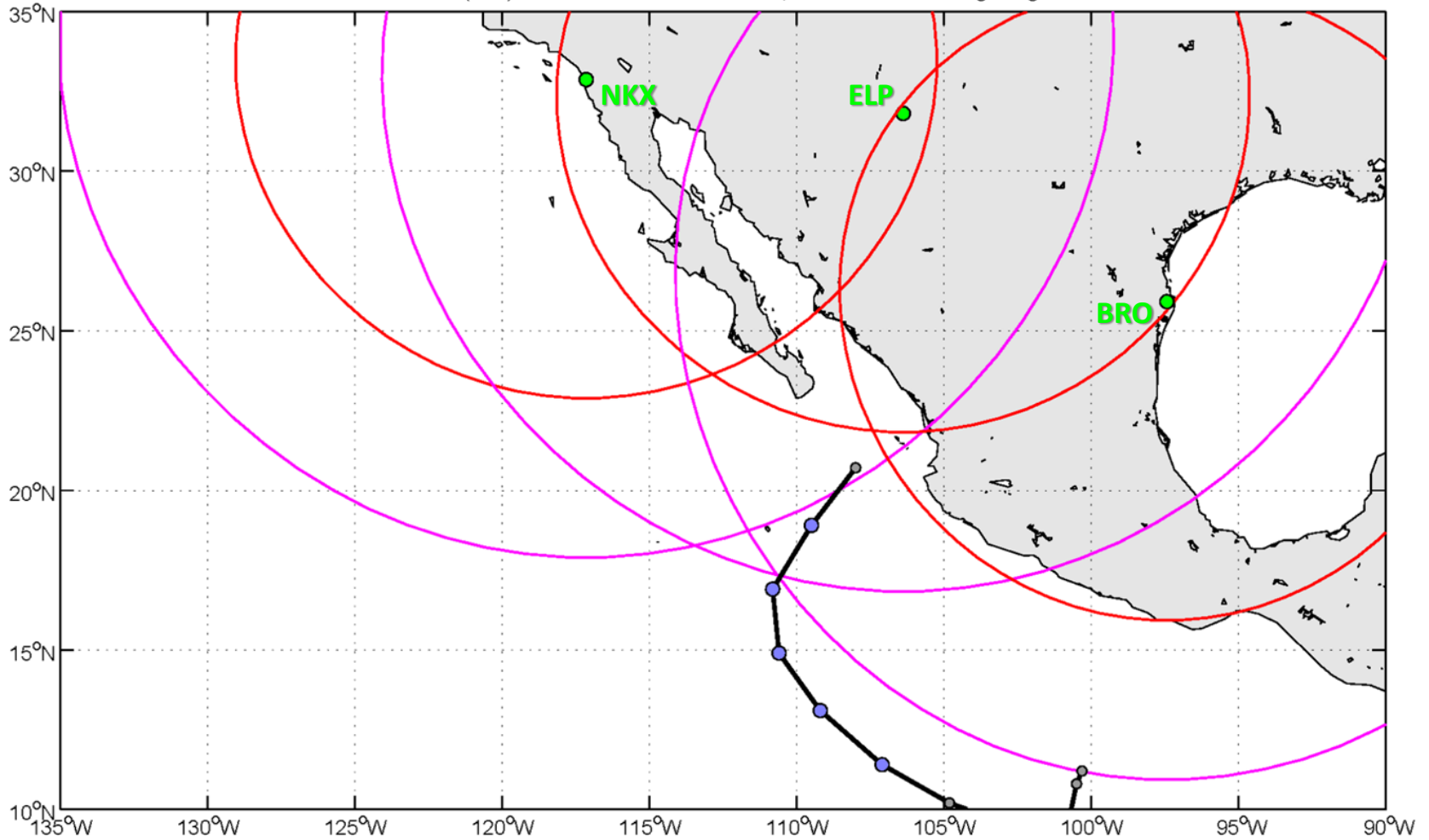
- Vance (21E, 2014)

Other examples:

- Octave (15E, 2013)
- Raymond (17E, 2013)
- Sonia (18E, 2013)
- Paul (16E, 2012)
- Jova (10E, 2011)
- Patricia (19E, 2009)
- Rick (20E, 2009)
- Norbert (15E, 2008)

Vance (21E): 2014103012-2014110500

Vance (20E): 2014103012 - 2014110500 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

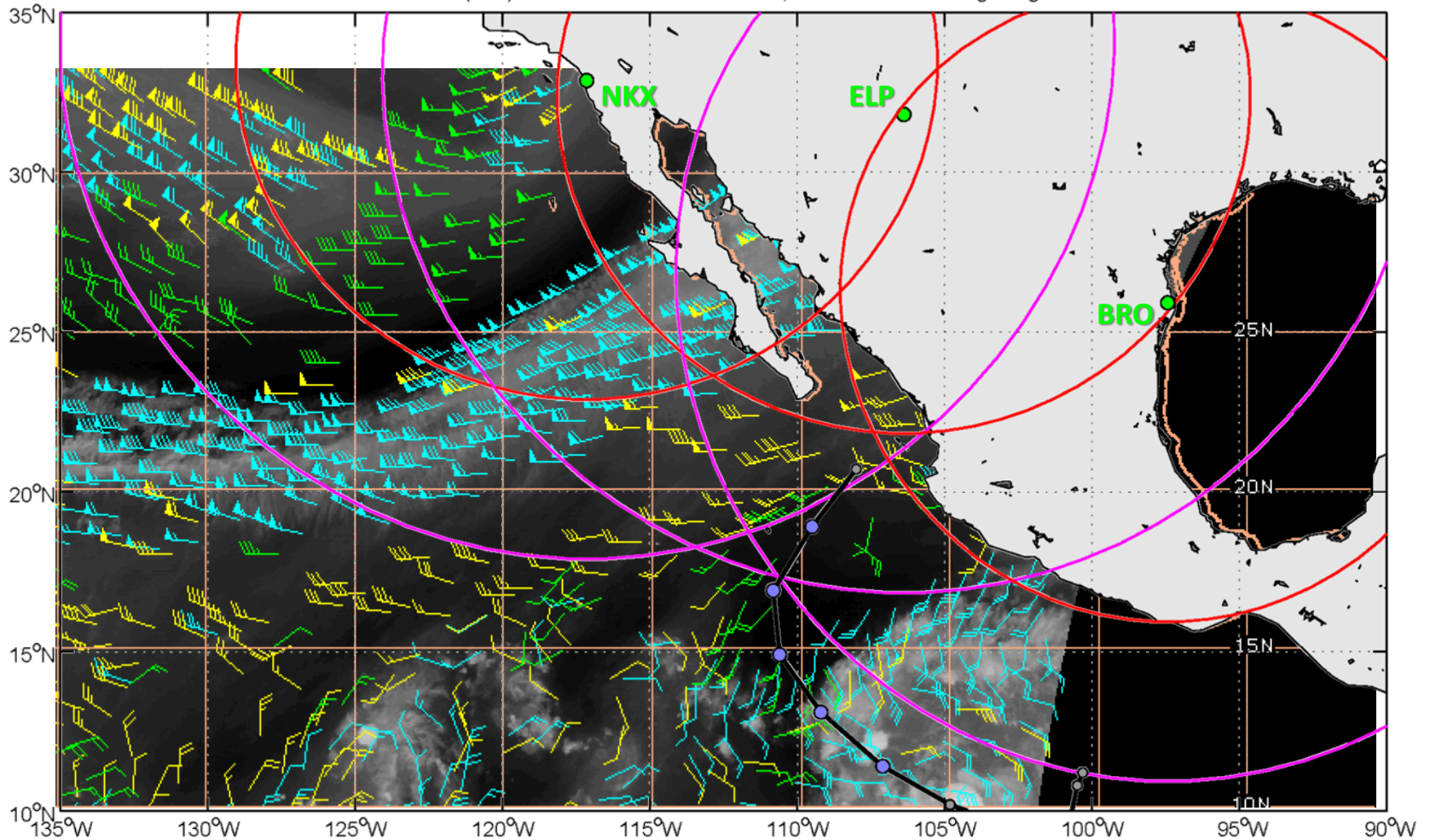
900 nm range ring

Vance (21E): 2014103012-2014110500

CIMSS Upper-level AMVs: 2014110200

100-250 mb 251-350 mb 351-500 mb

Vance (20E): 2014103012 - 2014110500 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

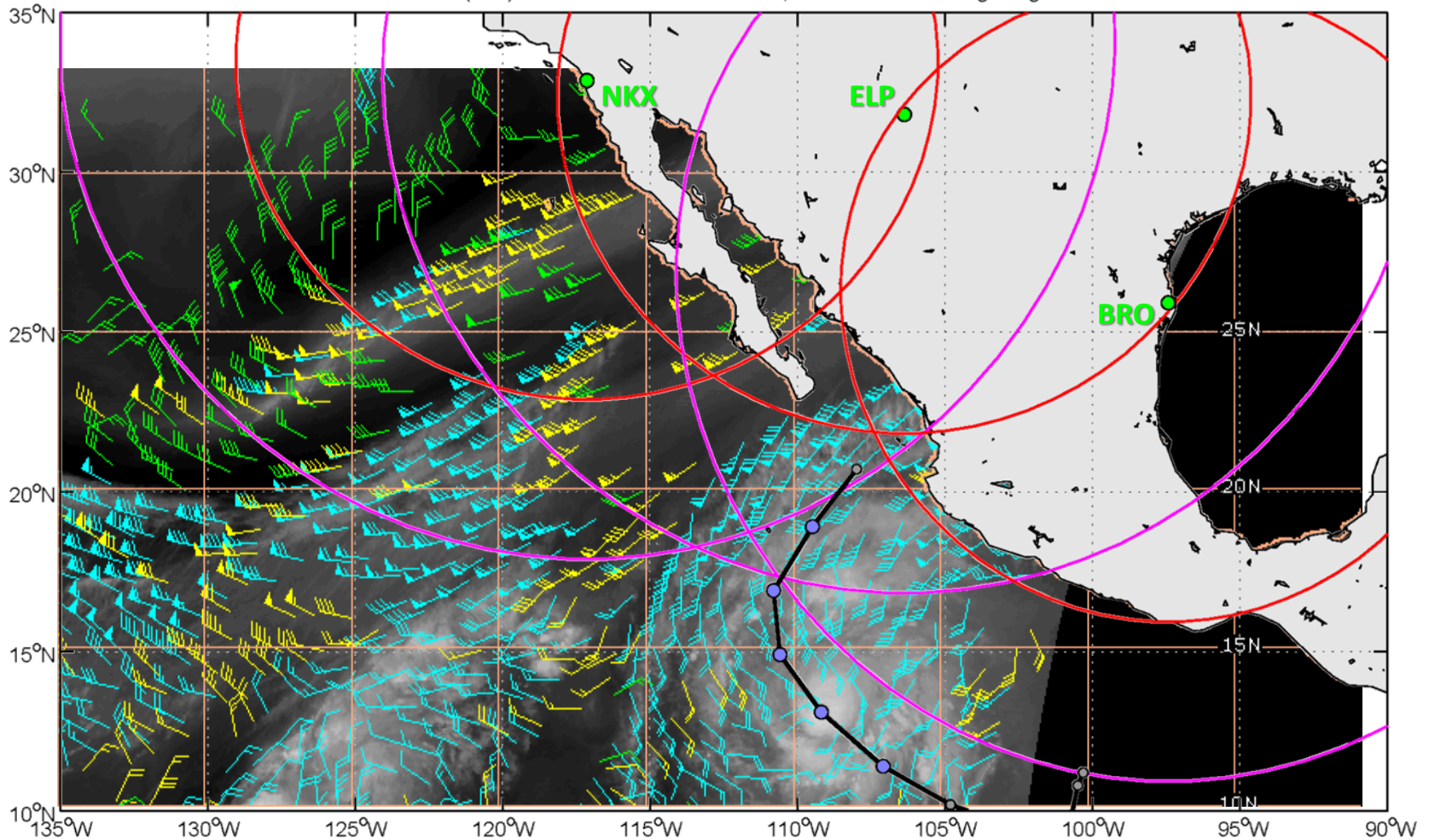
900 nm range ring

Vance (21E): 2014103012-2014110500

CIMSS Upper-level AMVs: 2014110300

100-250 mb 251-350 mb 351-500 mb

Vance (20E): 2014103012 - 2014110500 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

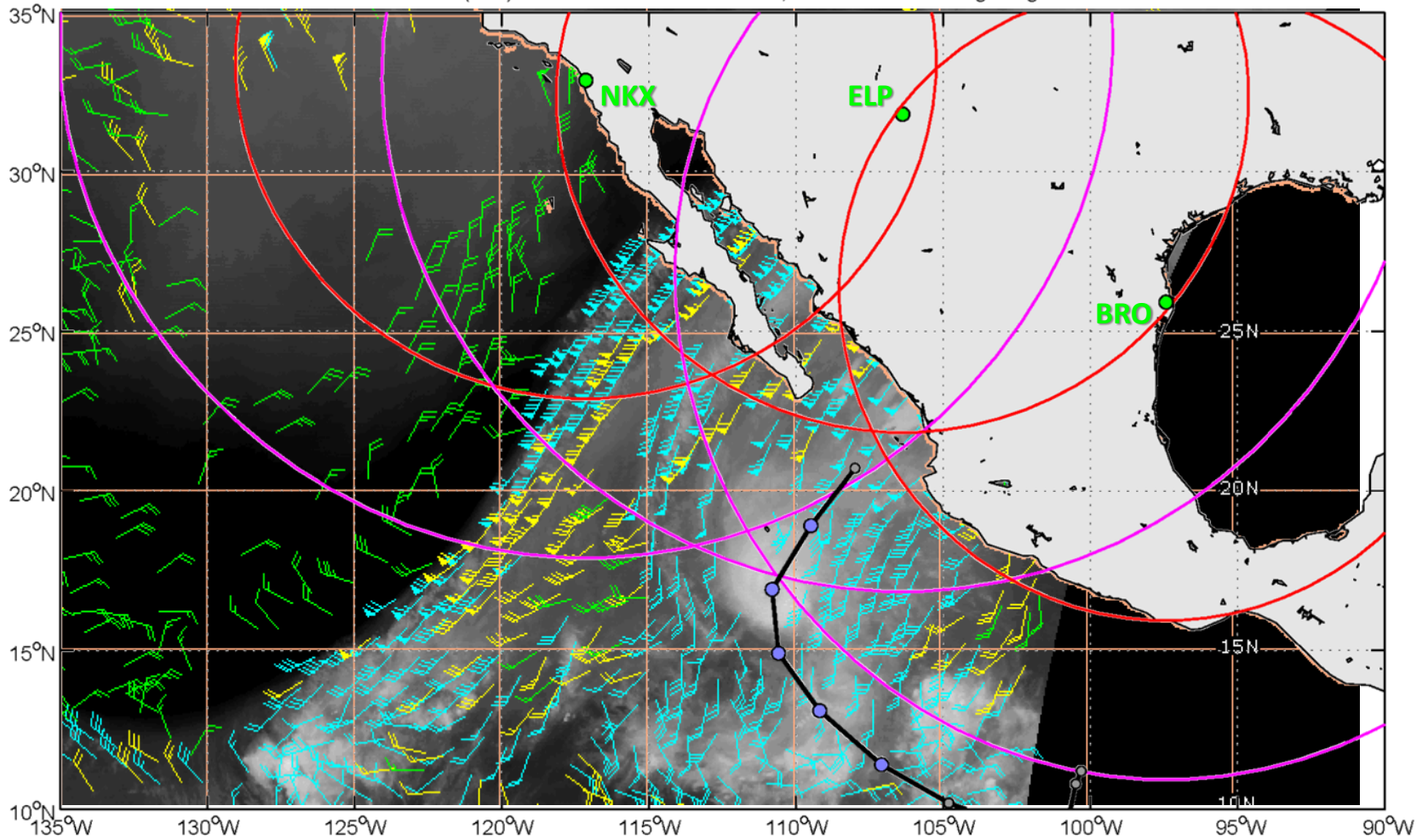
900 nm range ring

Vance (21E): 2014103012-2014110500

CIMSS Upper-level AMVs: 2014110400

100-250 mb 251-350 mb 351-500 mb

Vance (20E): 2014103012 - 2014110500 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

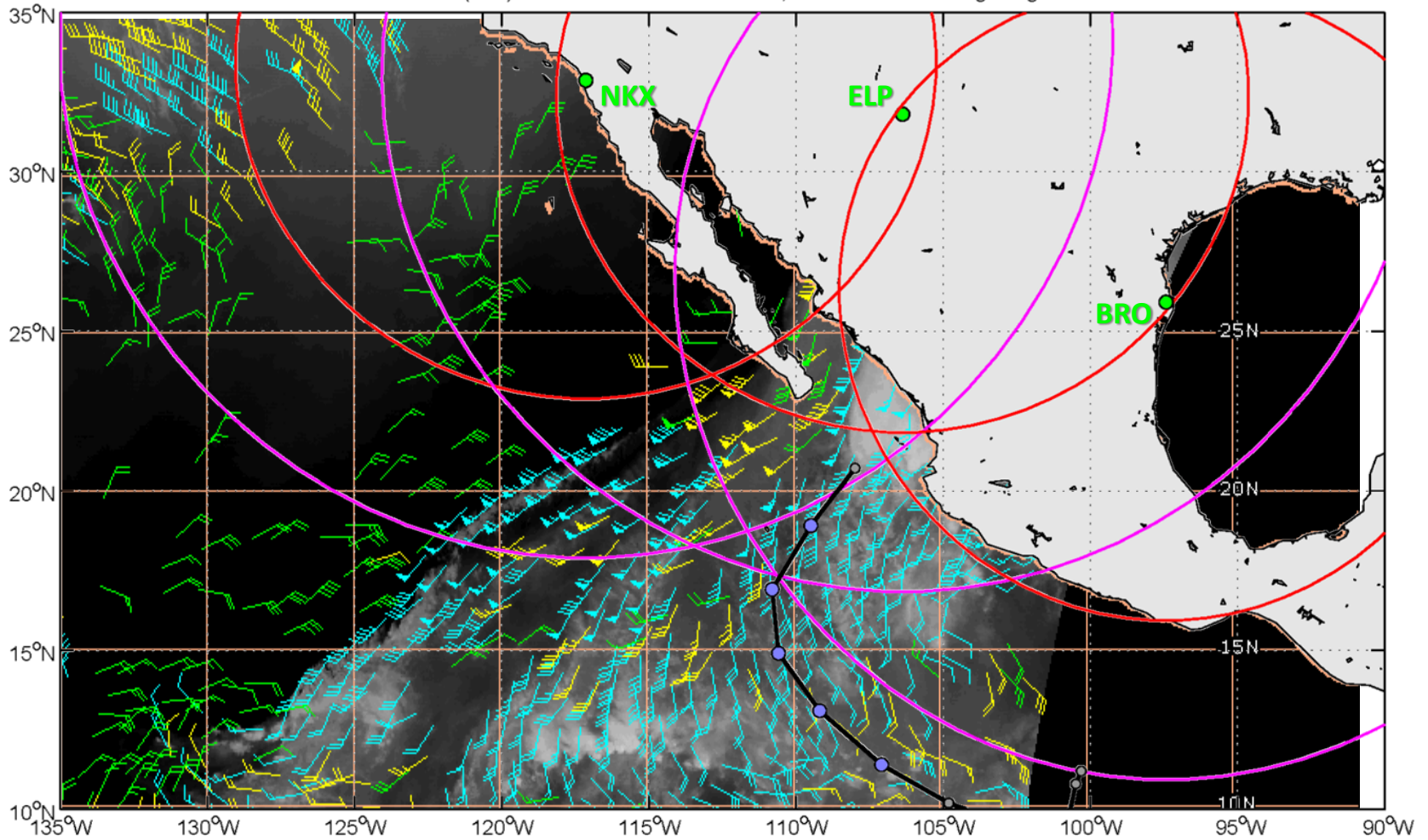
900 nm range ring

Vance (21E): 2014103012-2014110500

CIMSS Upper-level AMVs: 2014110500

100-250 mb 251-350 mb 351-500 mb

Vance (20E): 2014103012 - 2014110500 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

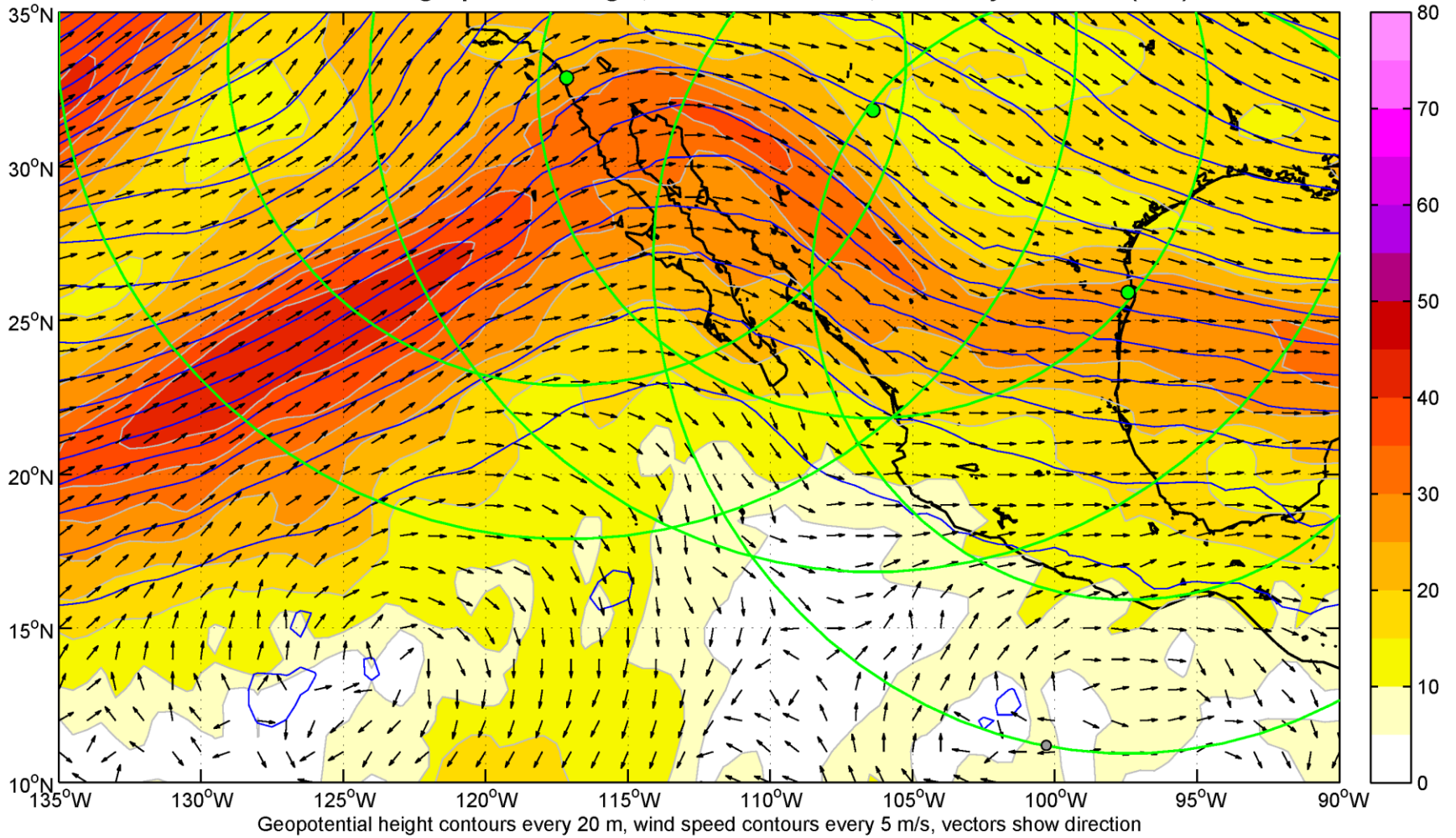
Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

900 nm range ring

200 mb wind and geopotential height, DTG = 2014103012, GFS analysis: Vance (21E)



Once Vance strengthened into a hurricane all its outflow headed north and east, meeting up with the oncoming trough

Questions for Vance:

Q1: From ELP, we could only fly to the storm center once. However, the outflow could be reached two days before the center was accessible, so a 3-flight sequence is plausible. Is this something we would be interested in doing?

Q2: Could an EastPac storm like Vance actually give us the best opportunity to sample a northeast-directed outflow jet? The geography of the situation (bases NE of TCs) is perhaps more advantageous than in the Atlantic.

Scenario #2: TC center comes close to Baja California

Case Study:

- Norbert (14E, 2014)

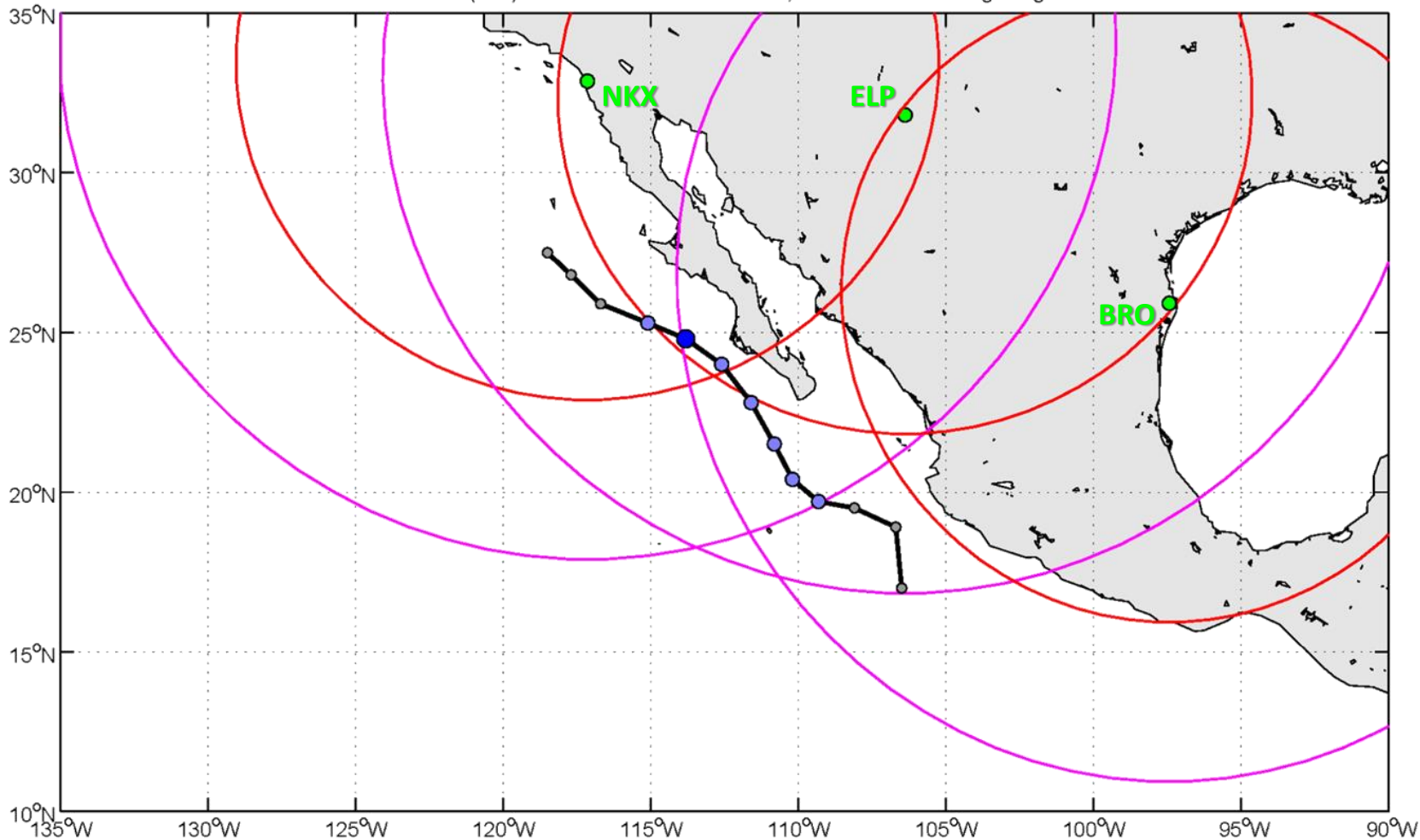
Other examples:

- Odile* (15E, 2014)
- Polo* (16E, 2014)
- Juliette (10E, 2013)
- Lorena (12E , 2013)
- Manuel (13E, 2013)
- Georgette (12E, 2010)
- Jimena (13E, 2009)
- Julio (11E, 2008)
- Henriette (11E, 2007)

* AMV/range ring plots available, but not included in presentation

Norbert (14E): 2014090212-2014090812

Norbert (14E): 2014090212 - 2014090812 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

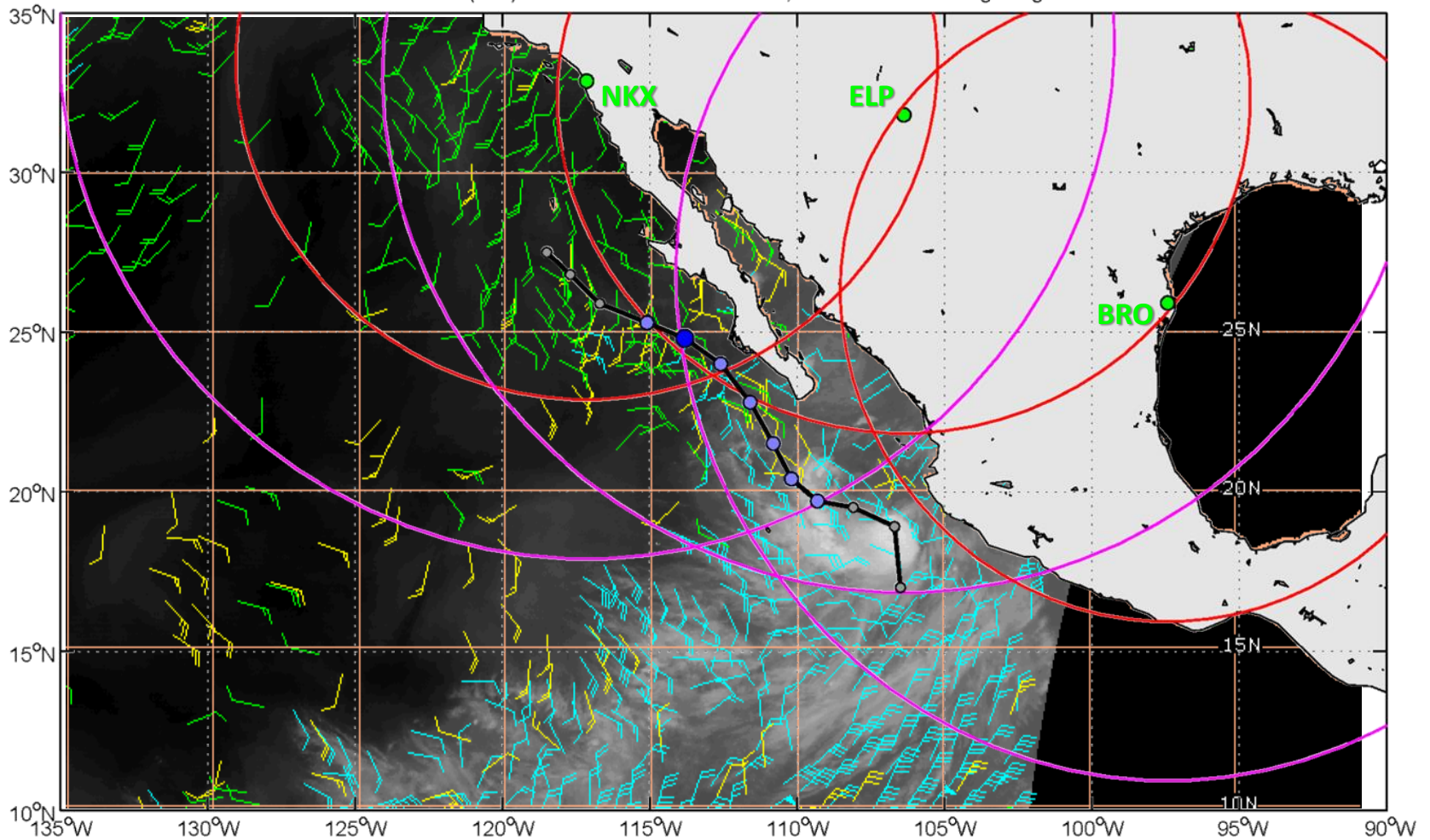
900 nm range ring

Norbert (14E): 2014090212-2014090812

CIMSS Upper-level AMVs: 2014090300

100-250 mb 251-350 mb 351-500 mb

Norbert (14E): 2014090212 - 2014090812 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

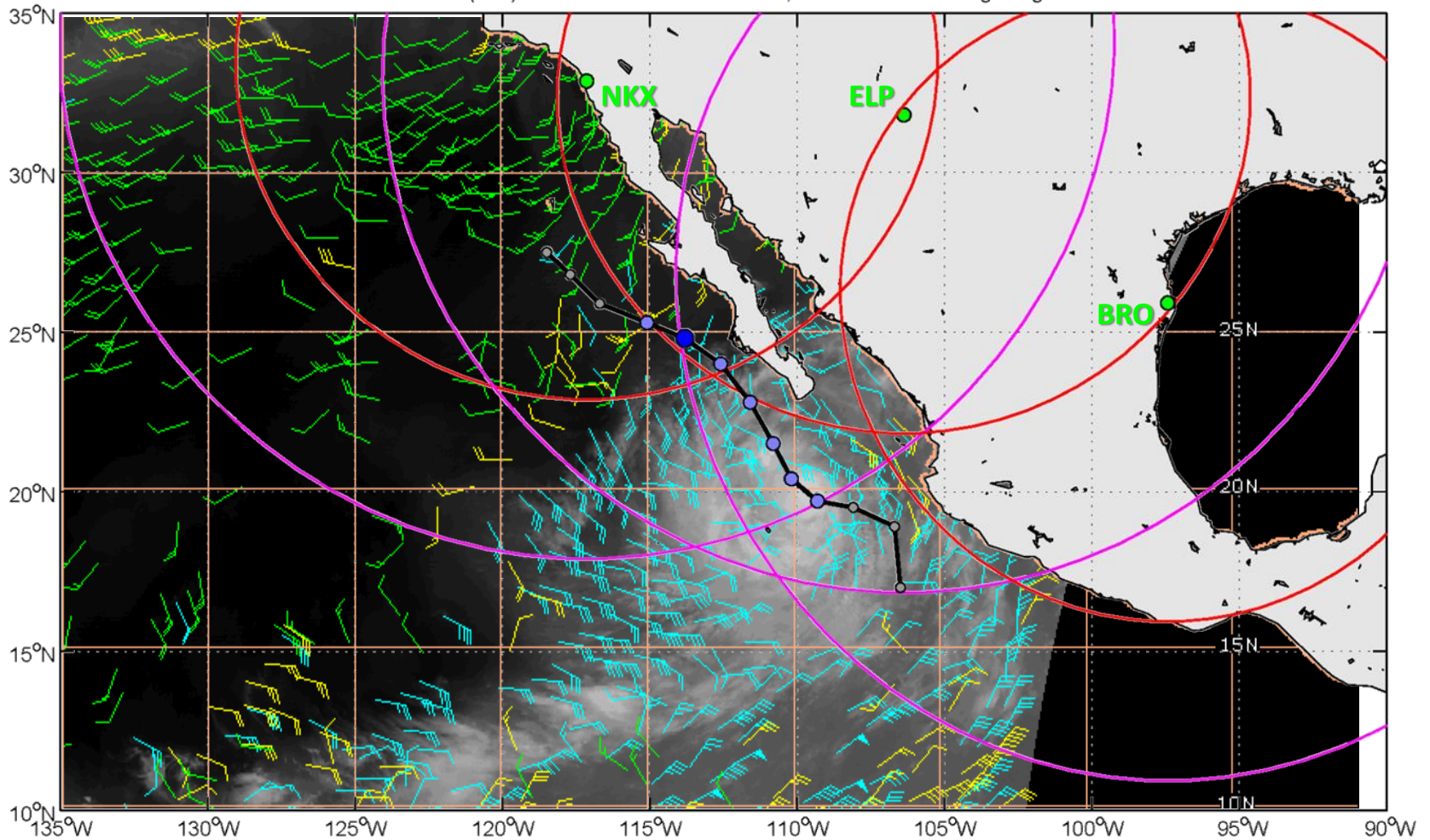
900 nm range ring

Norbert (14E): 2014090212-2014090812

CIMSS Upper-level AMVs: 2014090400

100-250 mb 251-350 mb 351-500 mb

Norbert (14E): 2014090212 - 2014090812 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

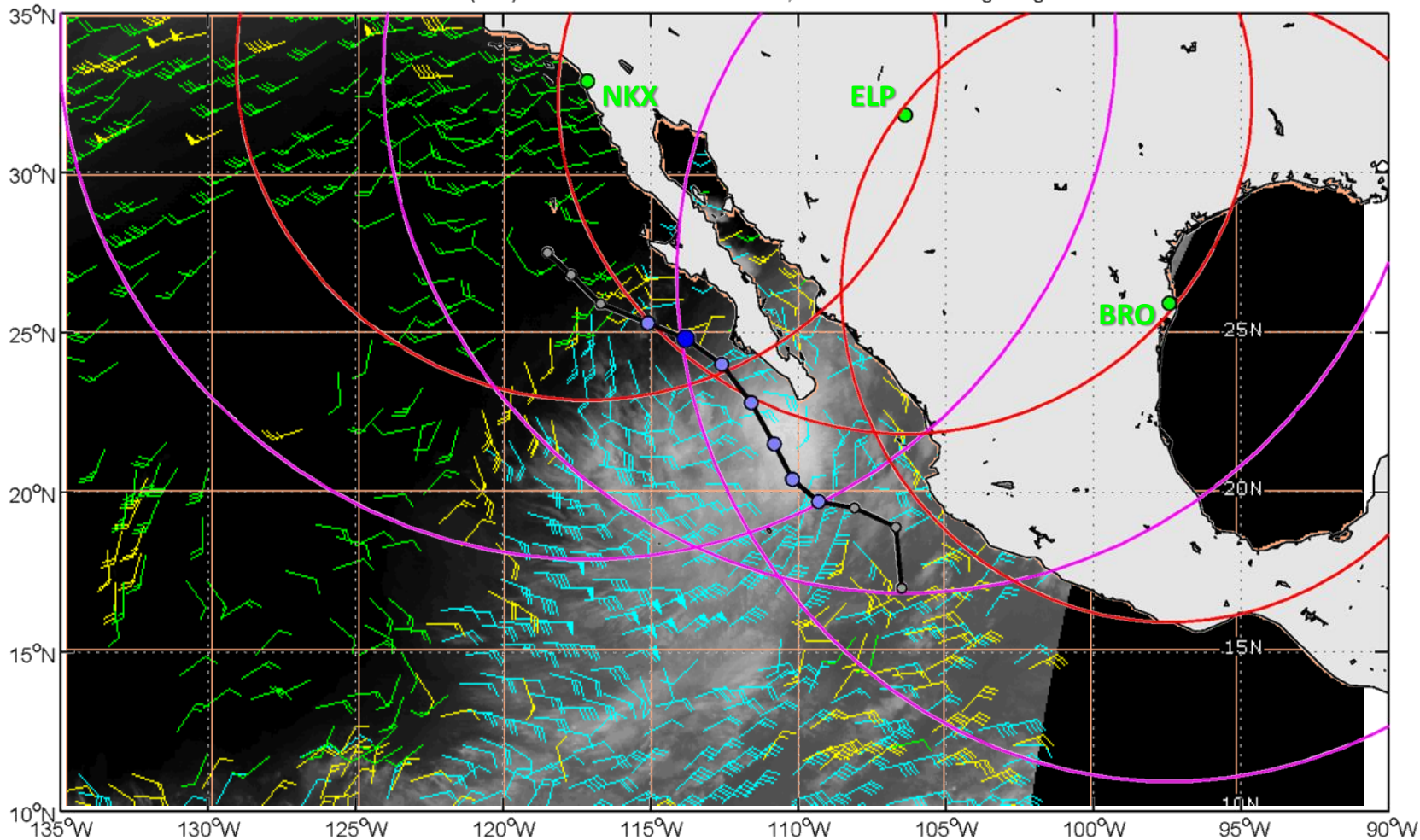
900 nm range ring

Norbert (14E): 2014090212-2014090812

CIMSS Upper-level AMVs: 2014090500

100-250 mb 251-350 mb 351-500 mb

Norbert (14E): 2014090212 - 2014090812 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

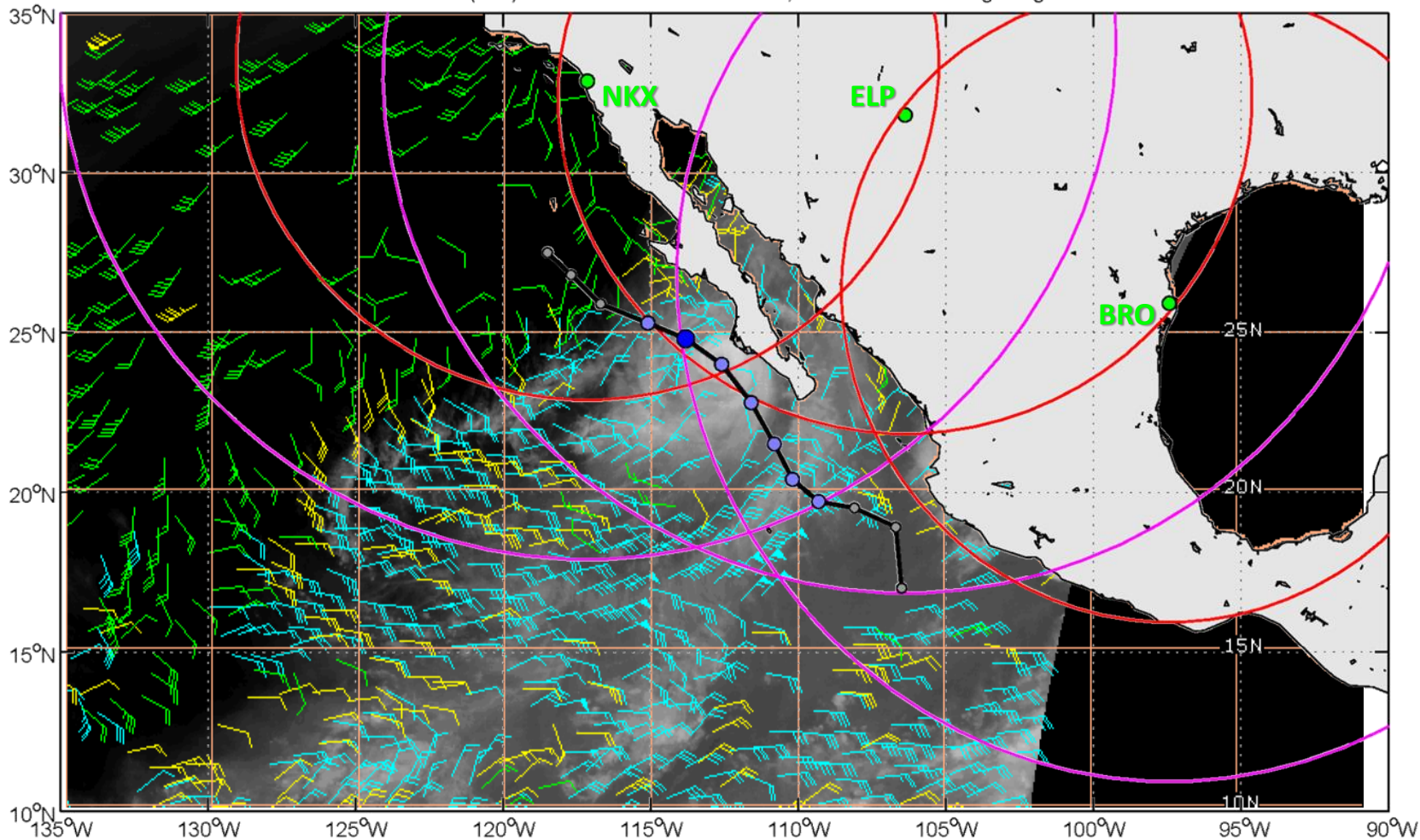
900 nm range ring

Norbert (14E): 2014090212-2014090812

CIMSS Upper-level AMVs: 2014090600

100-250 mb 251-350 mb 351-500 mb

Norbert (14E): 2014090212 - 2014090812 ; 600 and 900 nm range rings



Best-track with markers every 12 h
Small gray marker: TS or TD intensity
Medium purple marker: Cat 1-2 Hur intensity
Large blue marker: Cat 3-5 Hur intensity

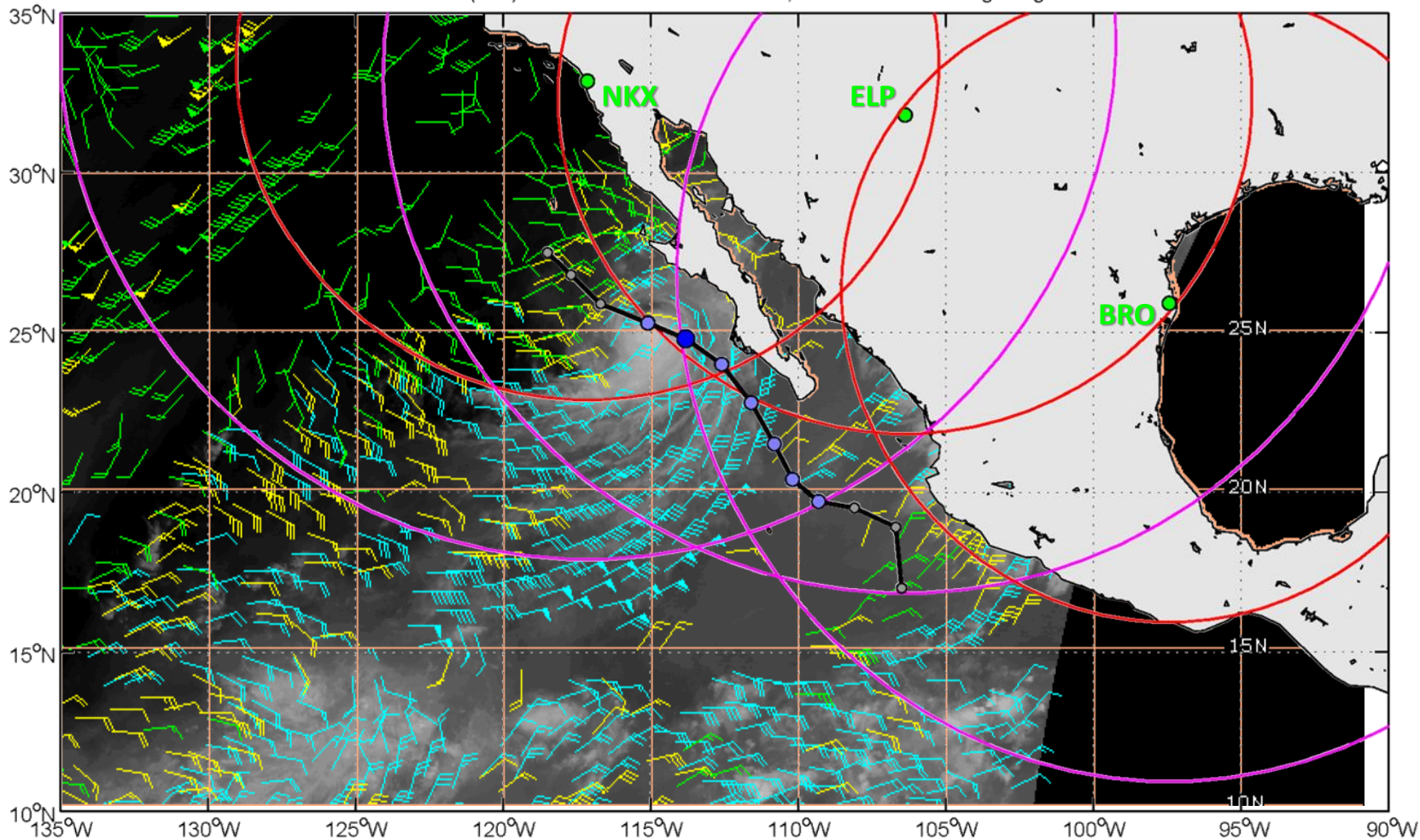
600 nm range ring
900 nm range ring

Norbert (14E): 2014090212-2014090812

CIMSS Upper-level AMVs: 2014090700

100-250 mb 251-350 mb 351-500 mb

Norbert (14E): 2014090212 - 2014090812 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

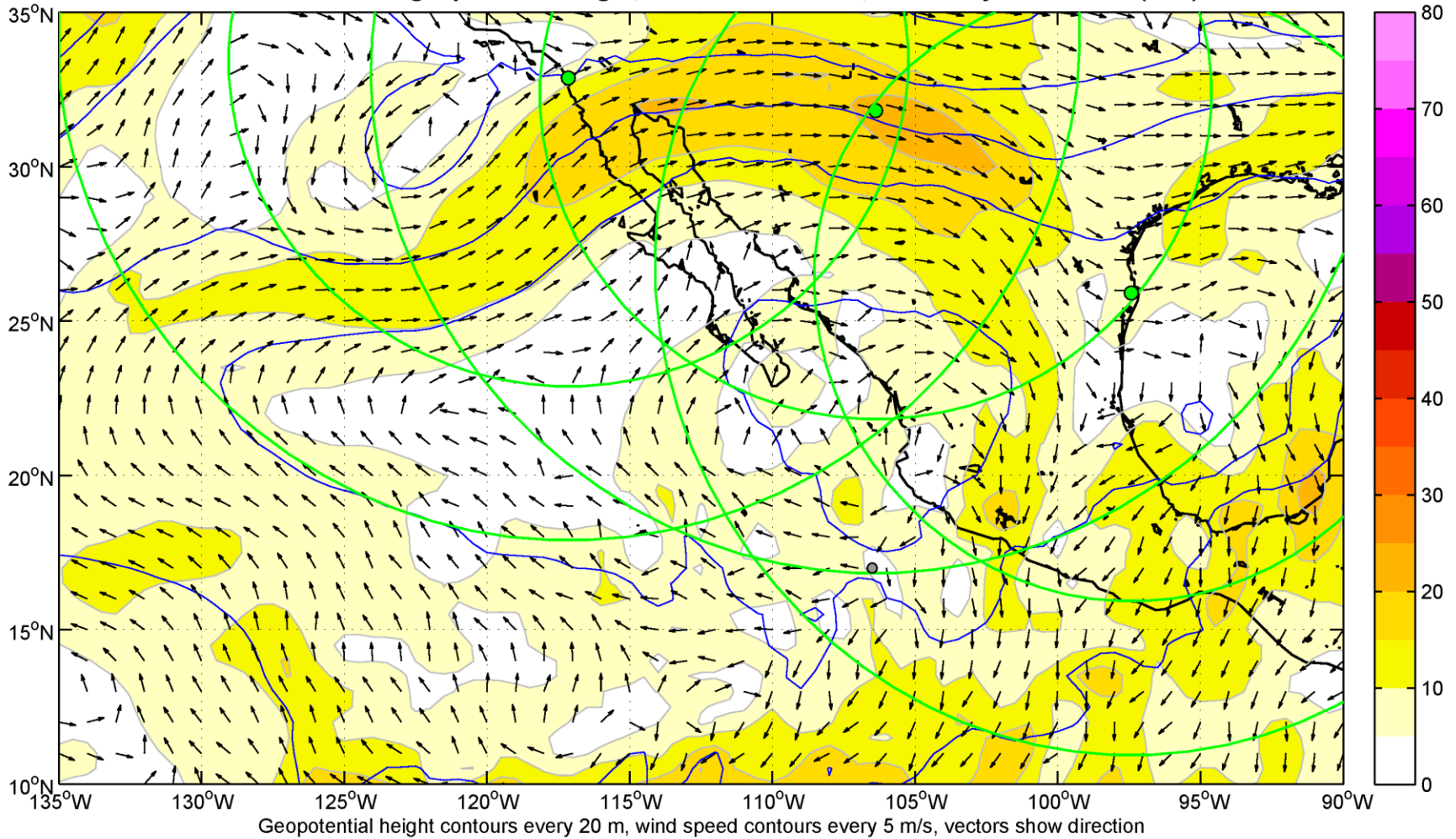
Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

900 nm range ring

200 mb wind and geopotential height, DTG = 2014090212, GFS analysis: Norbert (14E)



Most outflow from Norbert travels toward the SW. This is somewhat more apparent at 150 mb.

Questions for Norbert:

Q1: Norbert is a rather unusual case, with the center of the TC accessible from ELP for five consecutive days, as a hurricane for 4 of them. But, would we be willing to commit to the EastPac for basically the entire first week of September? Would we stay in the Atlantic no matter what that early in the season?

Scenario #3: TC outflow (but not center) comes close to Baja California

Case Study:

- Simon (18E, 2014)

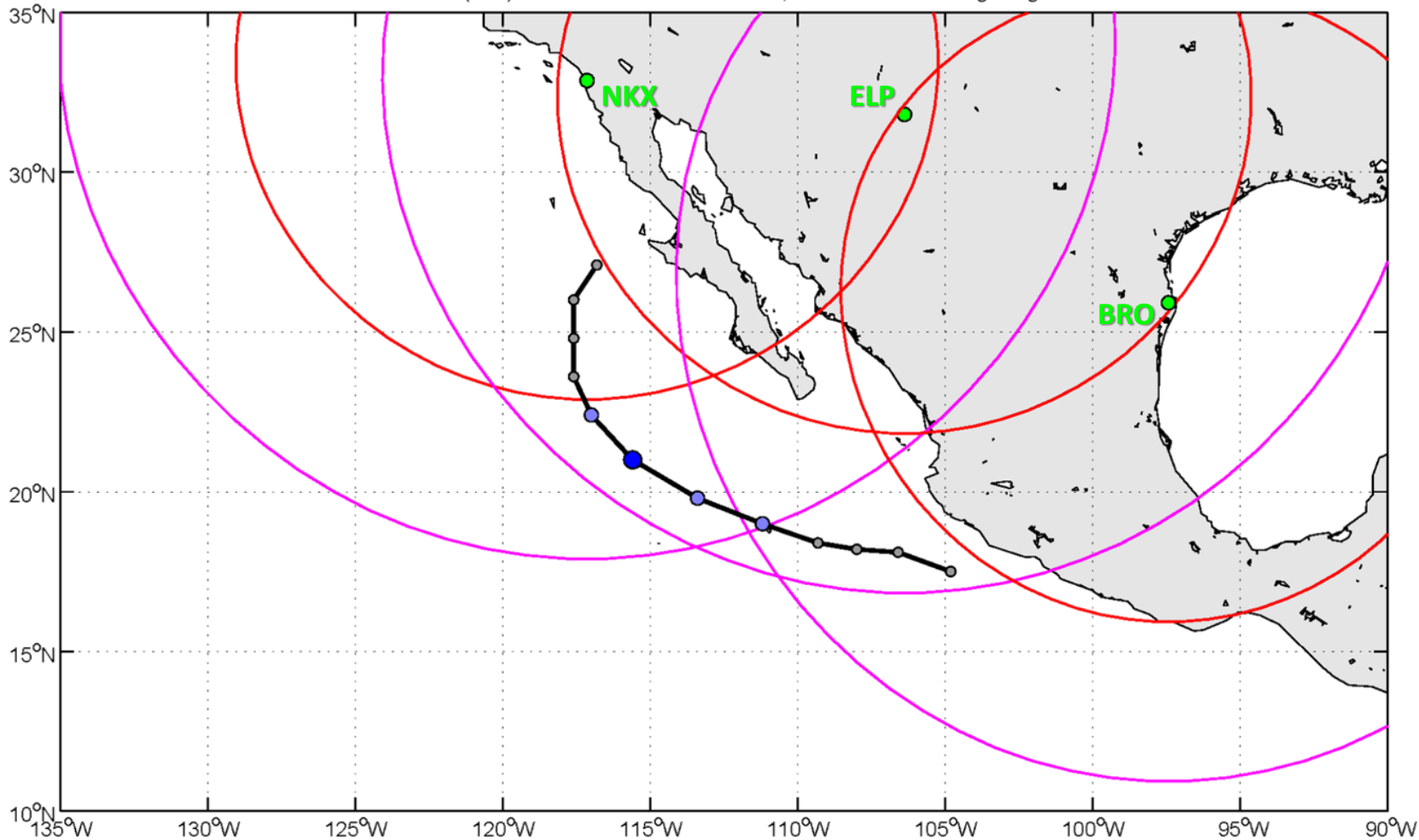
Other examples (2011-2014):

- Lowell* (12E, 2014)
- Marie* (13E, 2014)
- Rachel* (17E, 2014)
- Ivo (09E, 2013)
- Kiko (11E, 2013)
- Ileana (09E, 2012)
- Kristy (11E, 2012)
- Miriam (13E, 2012)
- Hilary (09E, 2011)
- Kenneth (13E, 2011)

* AMV/range ring plots available, but not included in presentation

Simon (18E): 2014100200-2014100712

Simon (18E): 2014100200 - 2014100712 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

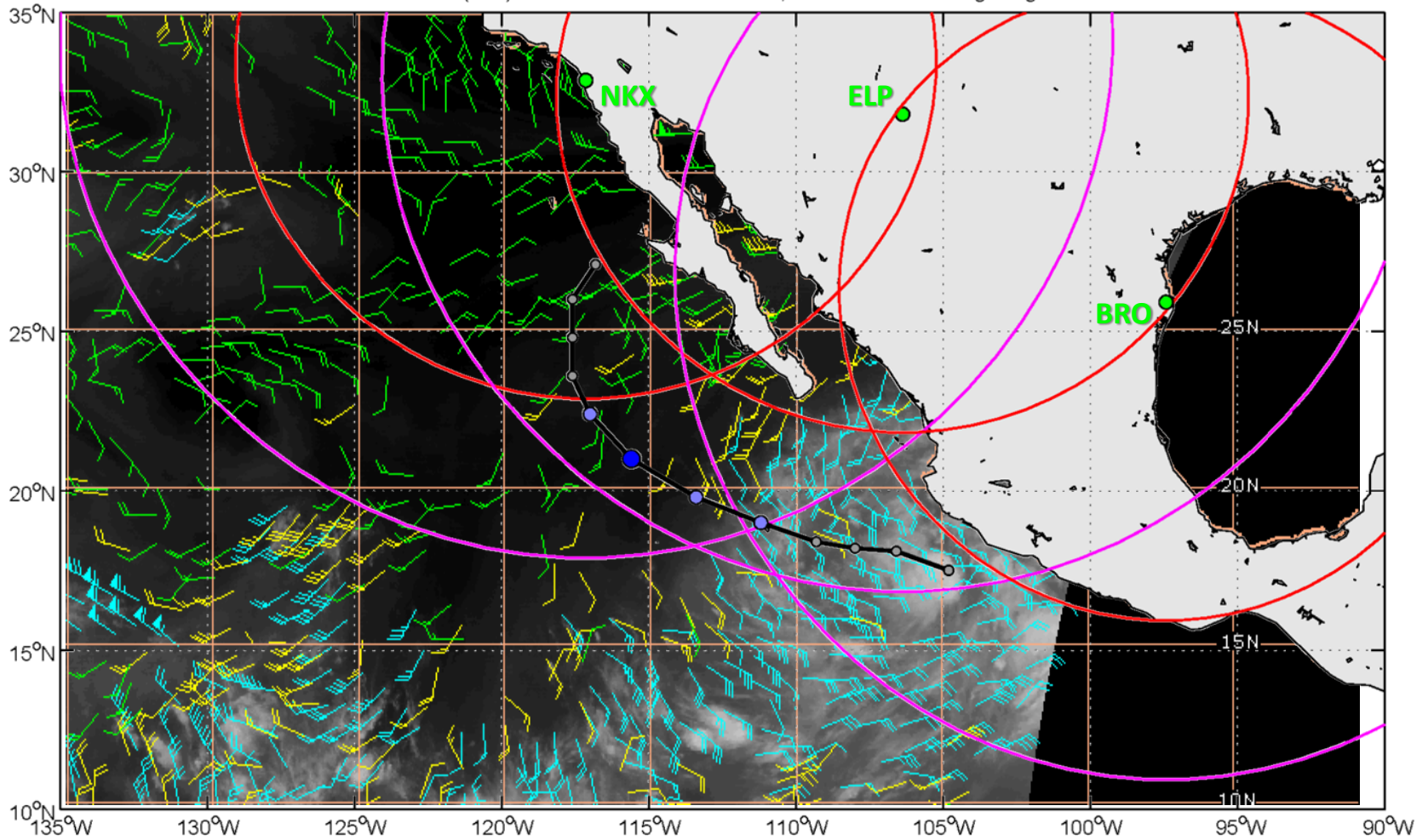
900 nm range ring

Simon (18E): 2014100200-2014100712

CIMSS Upper-level AMVs: 2014100200

100-250 mb 251-350 mb 351-500 mb

Simon (18E): 2014100200 - 2014100712 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

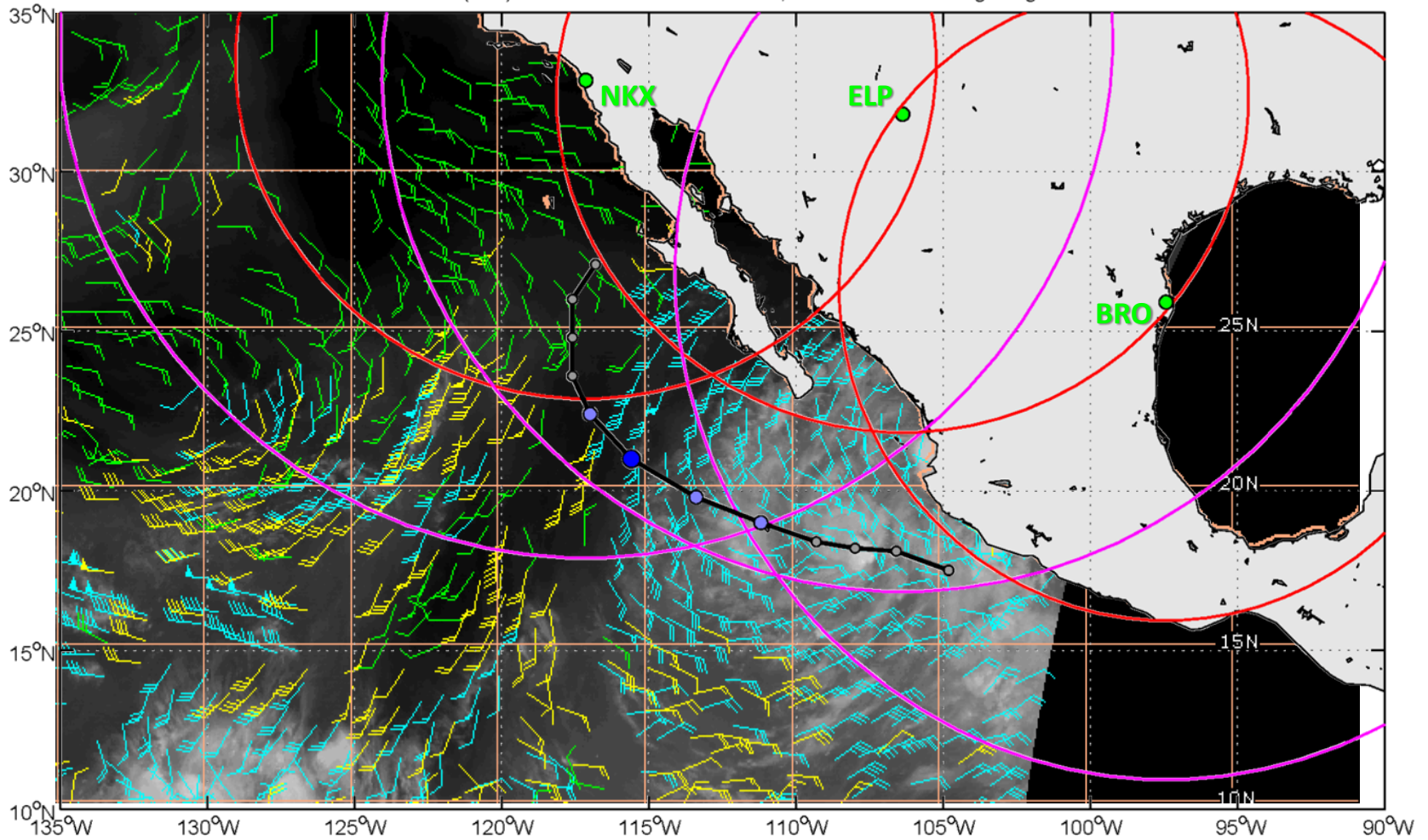
900 nm range ring

Simon (18E): 2014100200-2014100712

CIMSS Upper-level AMVs: 2014100300

100-250 mb 251-350 mb 351-500 mb

Simon (18E): 2014100200 - 2014100712 ; 600 and 900 nm range rings



Best-track with markers every 12 h
Small gray marker: TS or TD intensity
Medium purple marker: Cat 1-2 Hur intensity
Large blue marker: Cat 3-5 Hur intensity

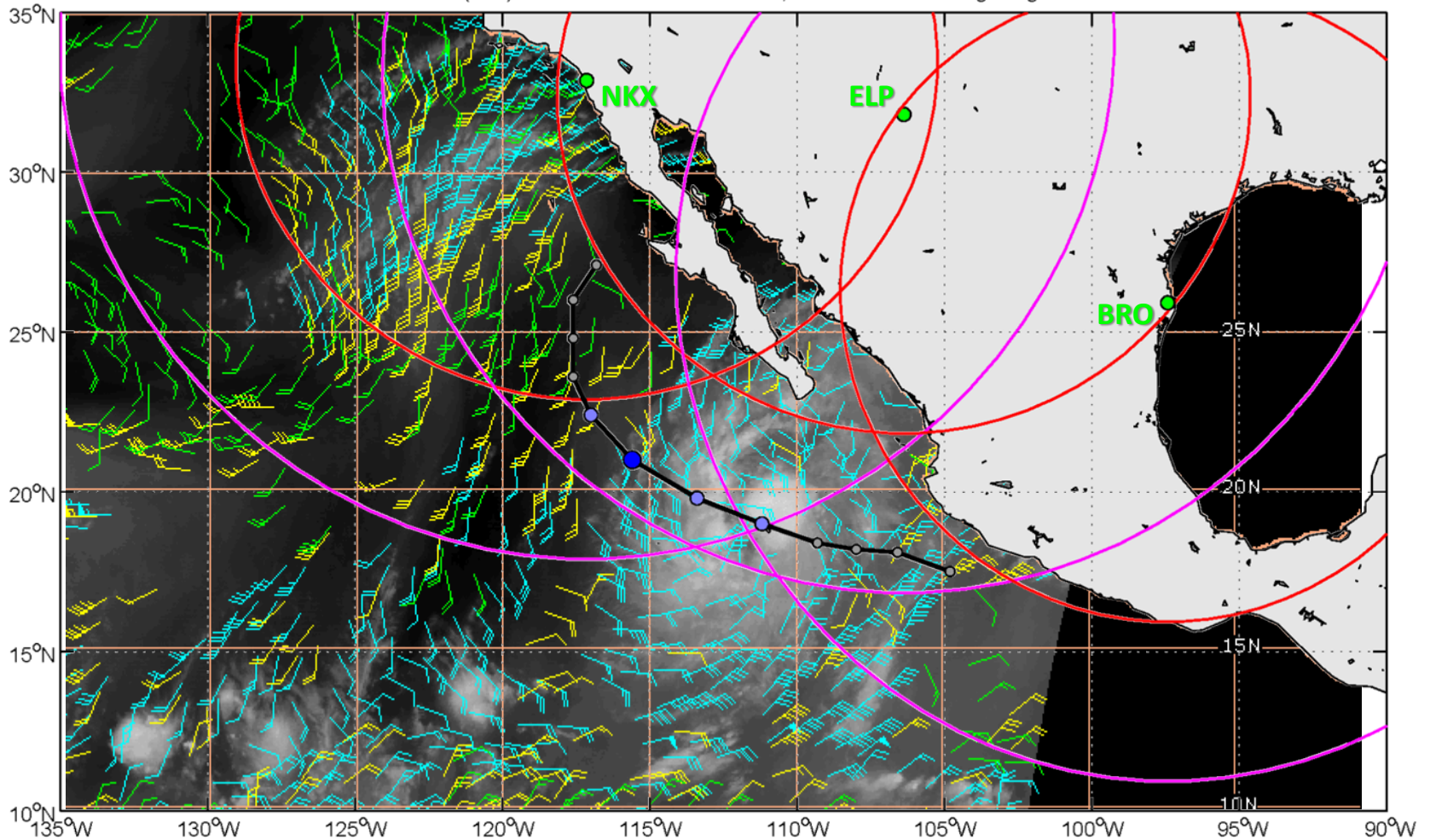
600 nm range ring
900 nm range ring

Simon (18E): 2014100200-2014100712

CIMSS Upper-level AMVs: 2014100400

100-250 mb 251-350 mb 351-500 mb

Simon (18E): 2014100200 - 2014100712 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

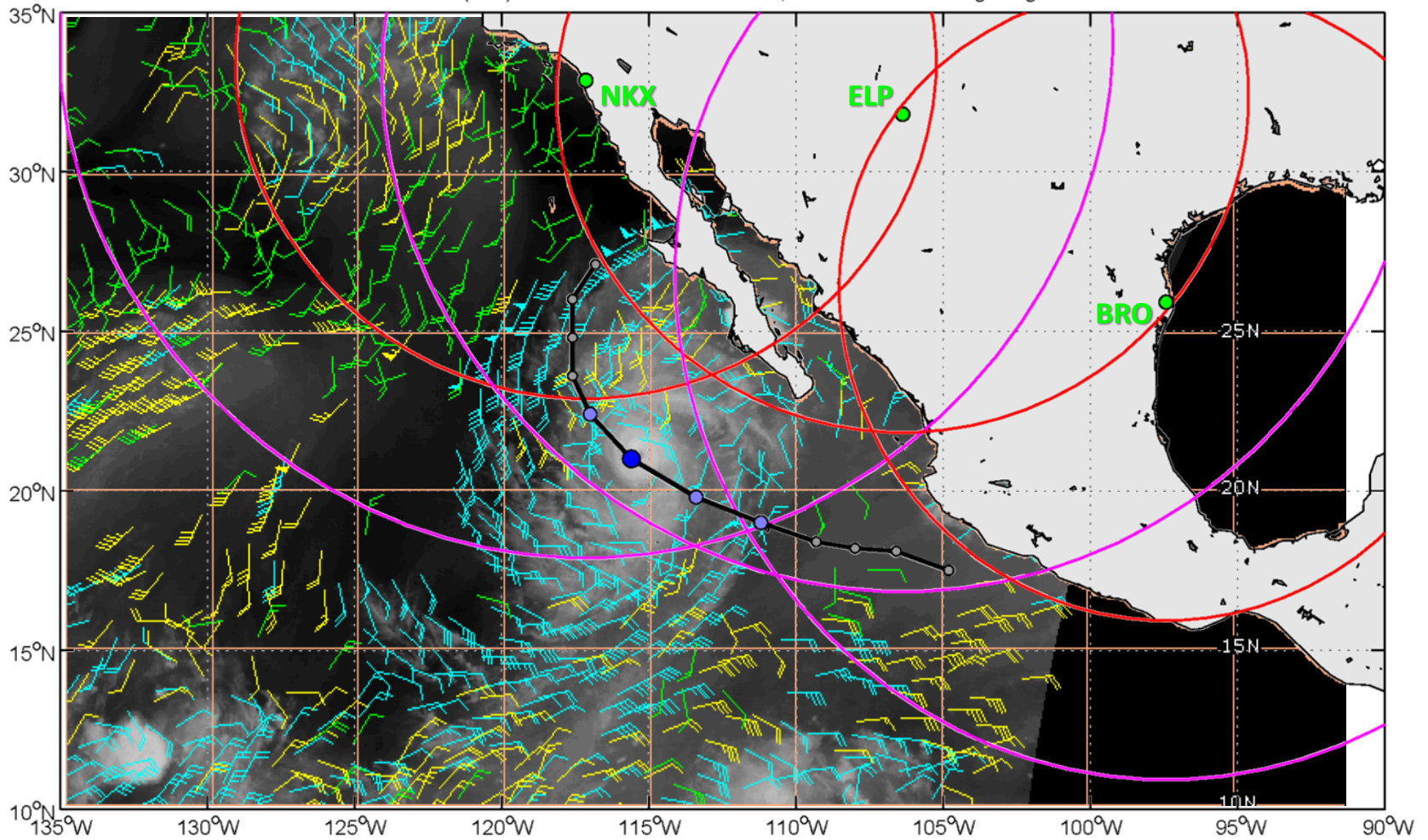
900 nm range ring

Simon (18E): 2014100200-2014100712

CIMSS Upper-level AMVs: 2014100500

100-250 mb 251-350 mb 351-500 mb

Simon (18E): 2014100200 - 2014100712 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

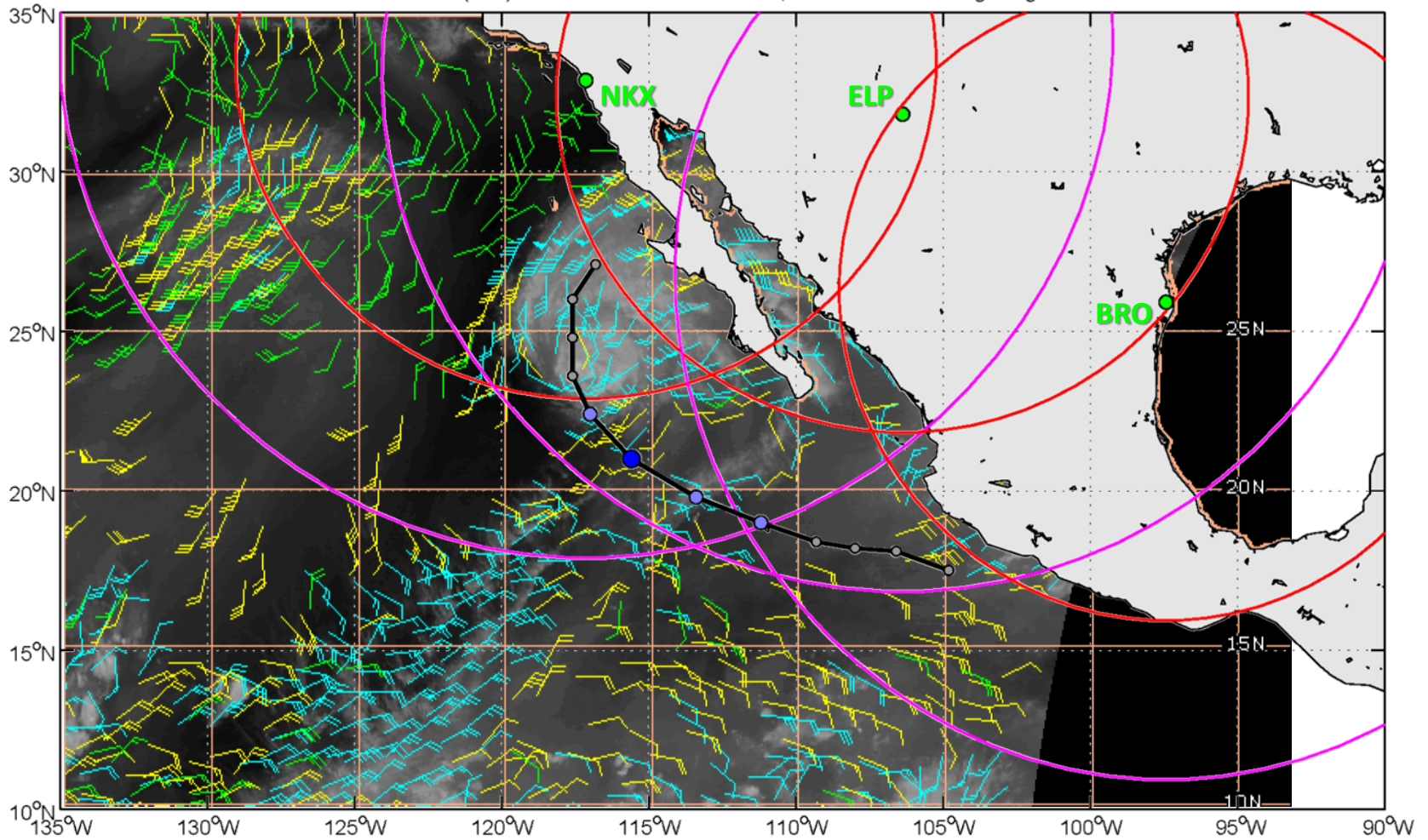
900 nm range ring

Simon (18E): 2014100200-2014100712

CIMSS Upper-level AMVs: 2014100600

100-250 mb 251-350 mb 351-500 mb

Simon (18E): 2014100200 - 2014100712 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

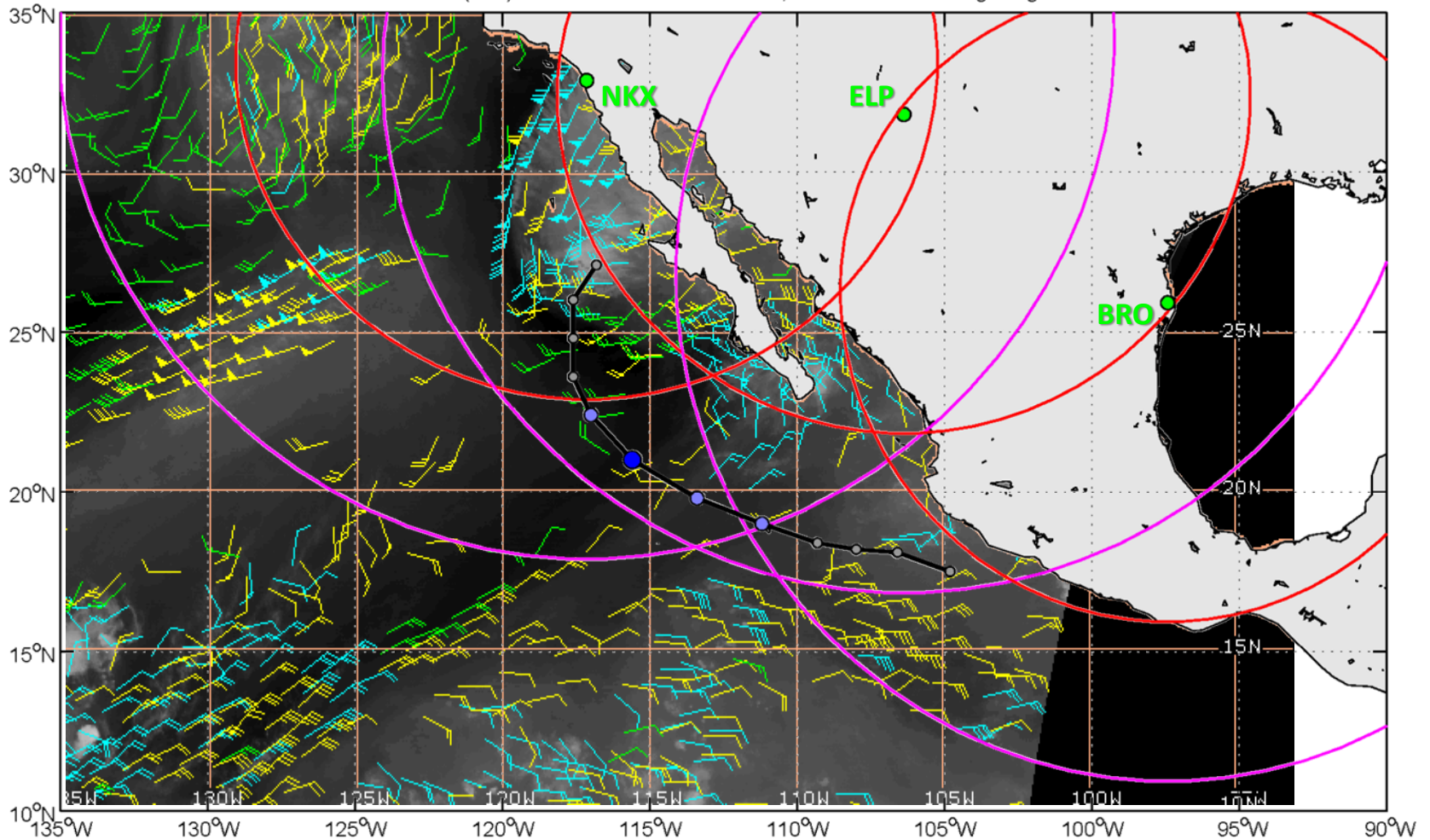
900 nm range ring

Simon (18E): 2014100200-2014100712

CIMSS Upper-level AMVs: 2014100700

100-250 mb 251-350 mb 351-500 mb

Simon (18E): 2014100200 - 2014100712 ; 600 and 900 nm range rings



Best-track with markers every 12 h

Small gray marker: TS or TD intensity

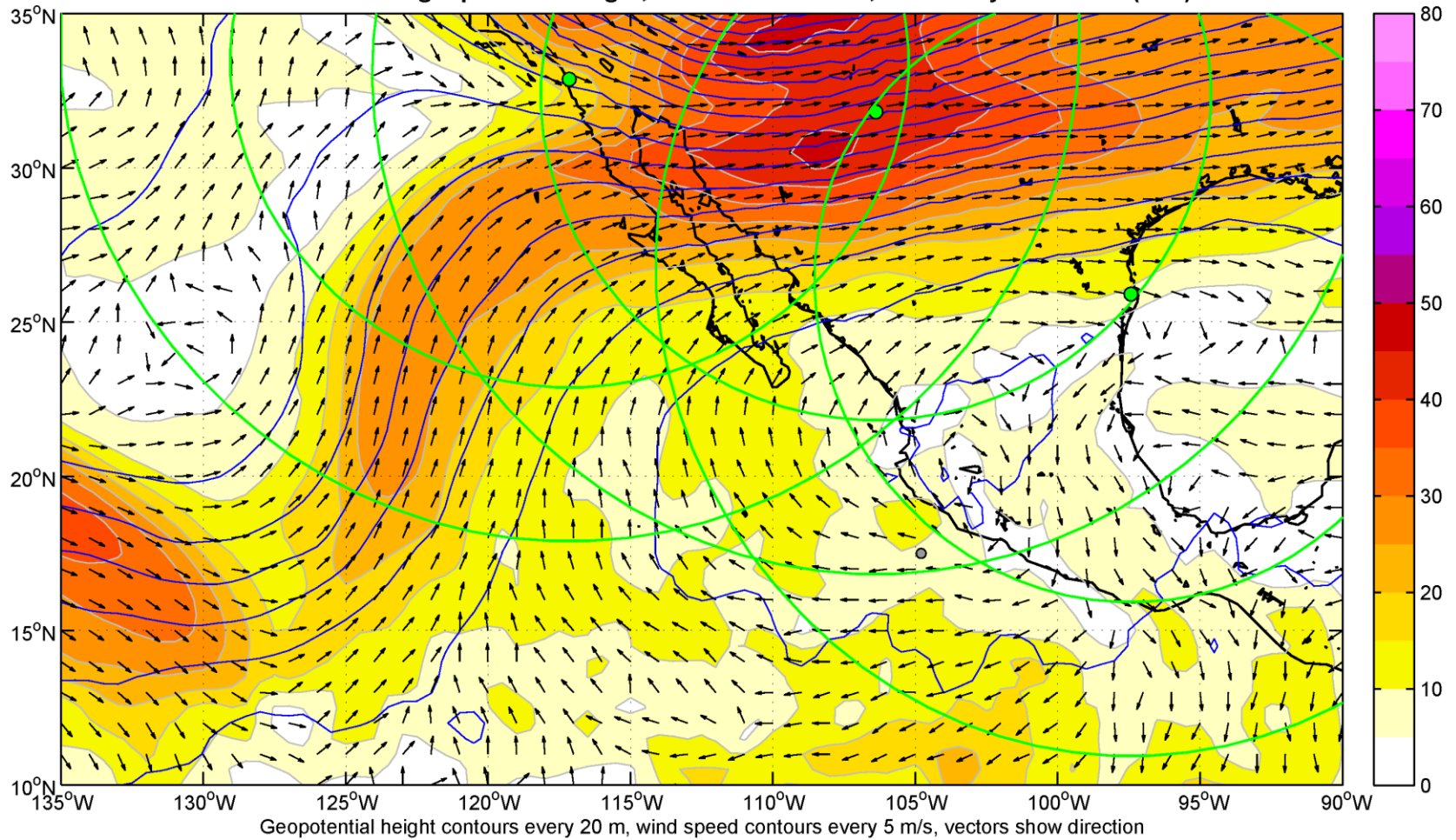
Medium purple marker: Cat 1-2 Hur intensity

Large blue marker: Cat 3-5 Hur intensity

600 nm range ring

900 nm range ring

200 mb wind and geopotential height, DTG = 2014100200, GFS analysis: Simon (18E)



Some of Simon's outflow heads NE over Baja, especially later in the storm's life.

Questions for Simon:

Q1: From ELP, we could fly the TC for 5 or 6 days in the row (I don't know if this is logistically feasible, but the TC would be within range). The storm center would barely be within range, but the outflow to the north and east of the center would be more readily accessible. Is it preferable to have a small amount of on station time at the center, or more time in the outflow NE of the center for a case like this?