

SOUTH AMERICA GRAIN WEATHER

2/13/18 OVERVIEW

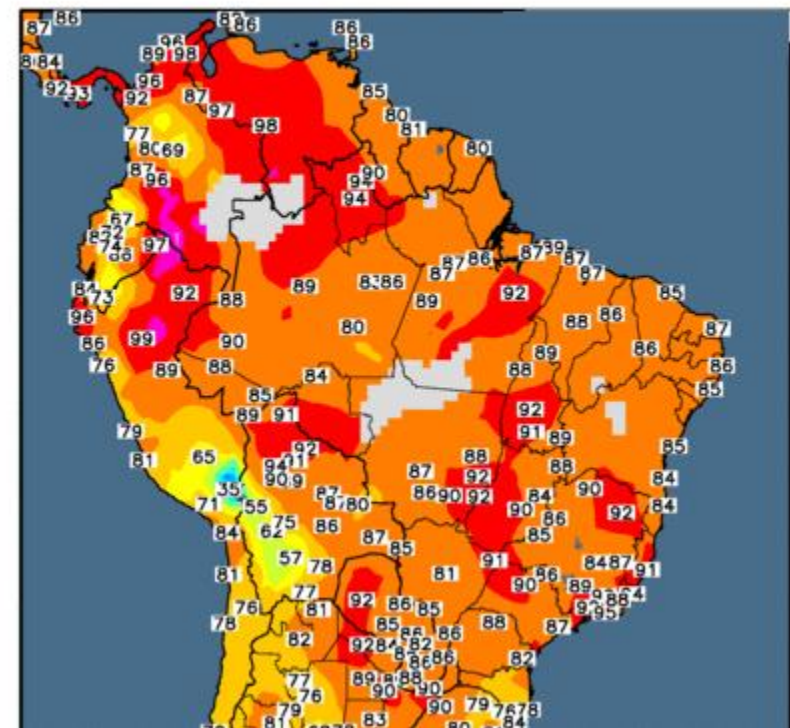
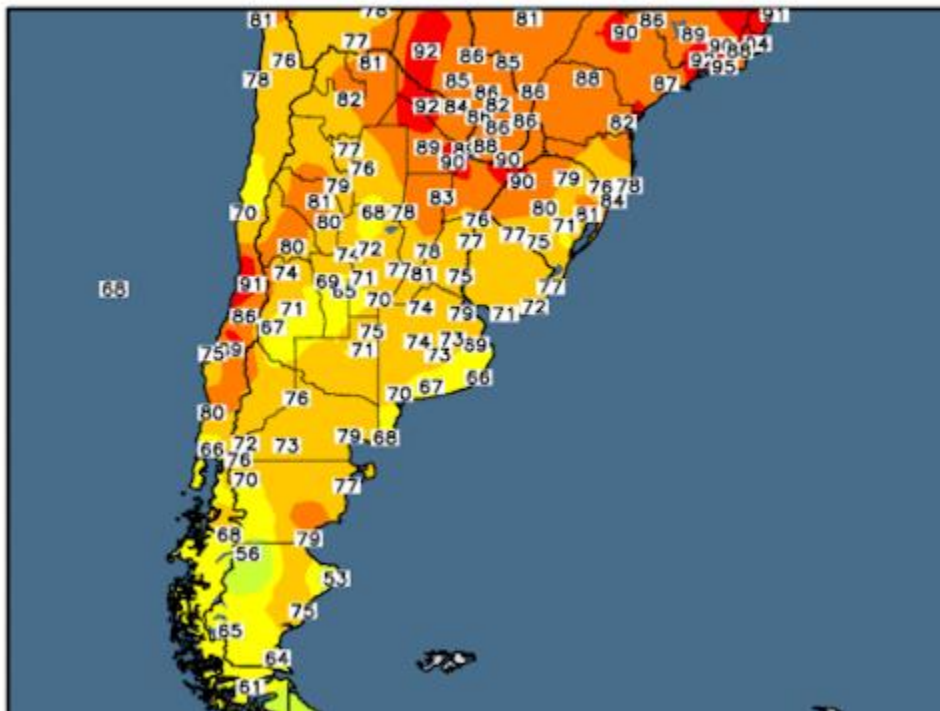
SUMMARY

Argentina continues to have problems with moisture all Brazil continues to have no problems and if anything too much. While there is no sign of the extreme heat coming back that I can see on the weather models for the next 7 to 10 days... There is no sign of the big rain showing up for Argentina all the next two weeks. Over the last few runs the GFS models consistently shown big rains developing for much of Argentina and it does so again early on Tuesday morning. However the GFS ensemble is much closer to the European and the European ensemble so given that as well as the seasonal trend and other factors... But I remain skeptical about the idea of a big rain showing up for any portion of central ...eastern ...or south central Argentina anytime over the next two weeks. There are some changes developing with the current MJO which might be more favorable for Argentina as we move into March. But by that time the lack of rain Argentina may have already done its damage

S.AMERICAN MAX TEMPS FEB 11

Max temperatures on February 11 actually Below Normal over central Argentina with many readings in the 70s/ 22-26c . In Brazil and Paraguay temps were seasonally warm in all areas...mostly 85-92f/ 29-32c

Observed Maximum Temperature (°F) 11 Feb 2018

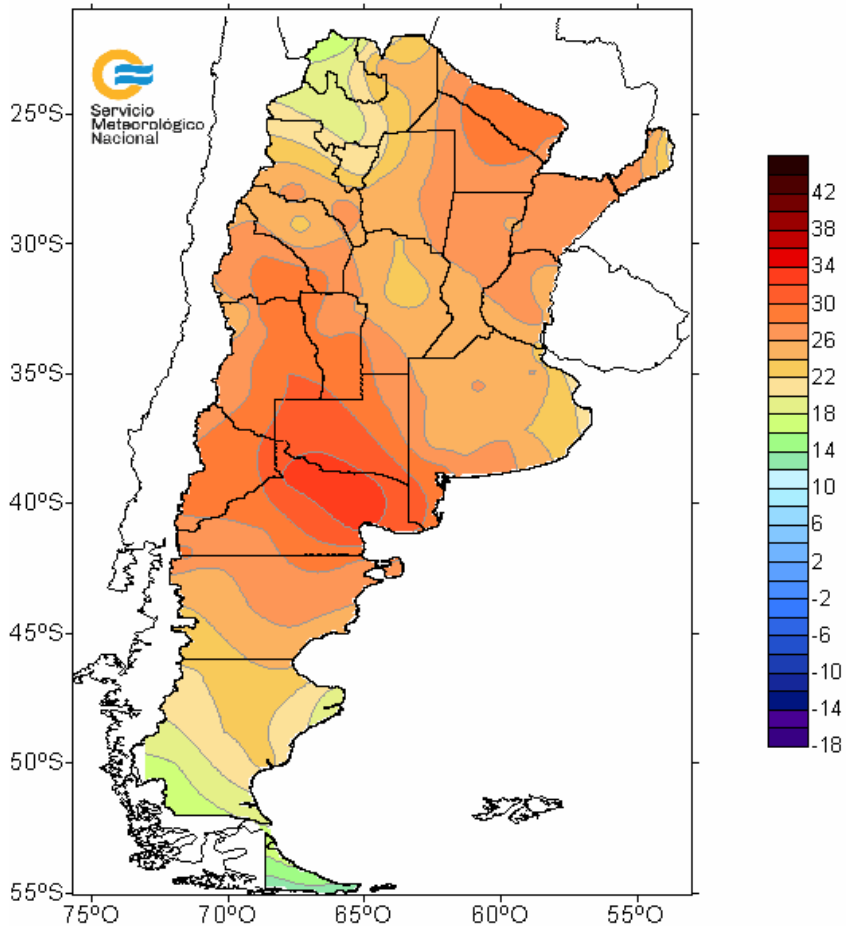


S.AMERICA MAX TEMPS FEB 12

Again most Max temperatures in Argentina on February 12 were Below Normal with many readings in the 70s/ 22-26c . In Brazil the heat returned with much west central...central... and east central Brazil 32-34c/ 92-94f.

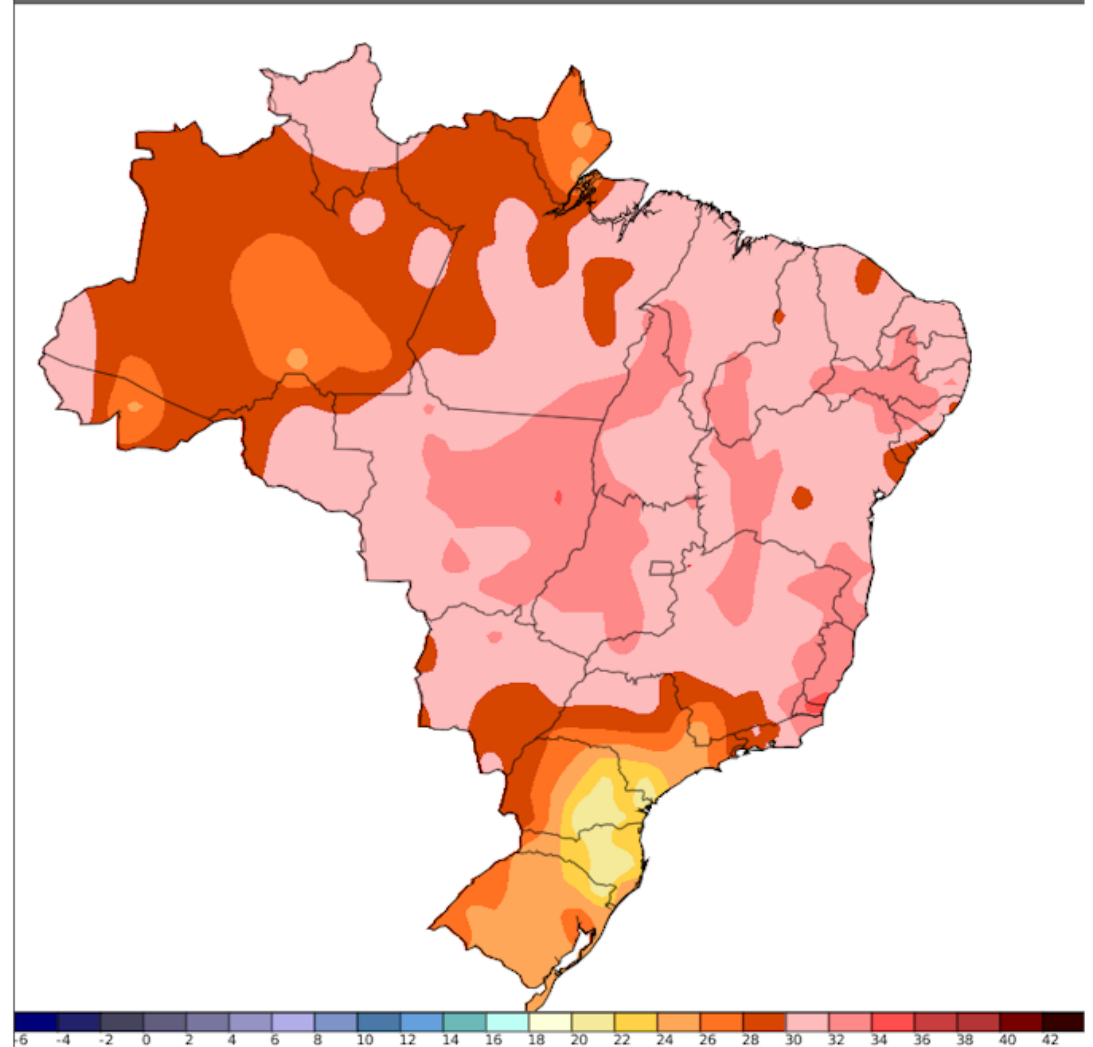
TEMPERATURAS MAXIMAS

12 de Febrero de 2018



Servicio Meteorológico Nacional

Instituto Nacional de Meteorologia - INMET
Temperatura Máxima (°C)
Informações Sinóticas do dia 13/02/2018 às 16:00 UTC

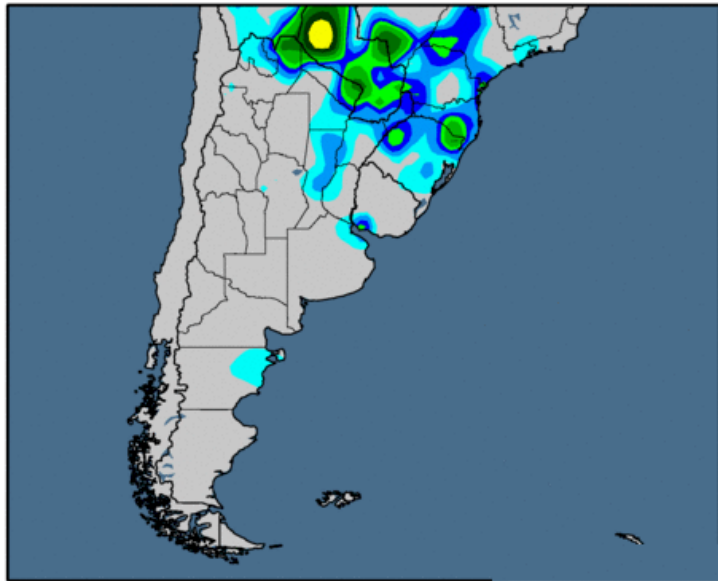


S.AMERICA RAINFALL FEB 11-12

MOST of Argentina was dry.. just some light rains under 12mm/ 0.50" in 60% of Santa Fe. In BRAZIL significant rains of 1.00-2.5"/ 25-60mm fell over 75% of western half of Mato Grosso. Moderate rains of 0.75-1.5"/ 20-38mm 50% southern MGDS western Parana and Sao Paulo and southern Tocantins. .

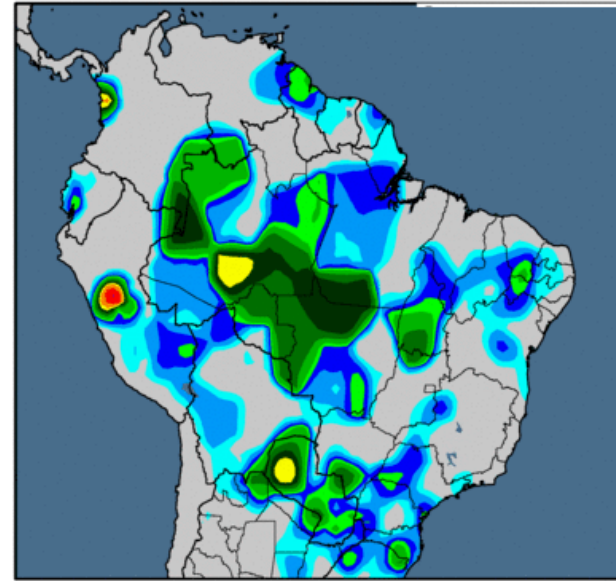
24-hour Precipitation Analysis

Observed precipitation (inches) through 12 UTC 11 Feb 2018



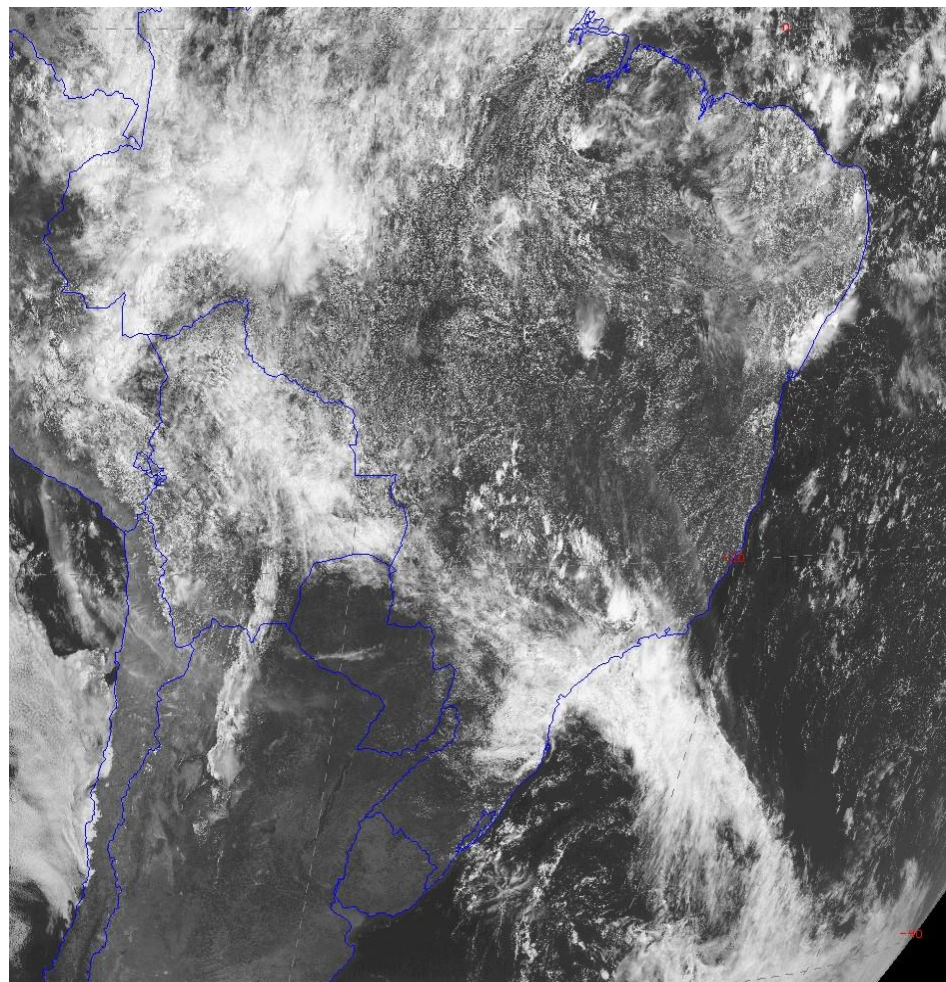
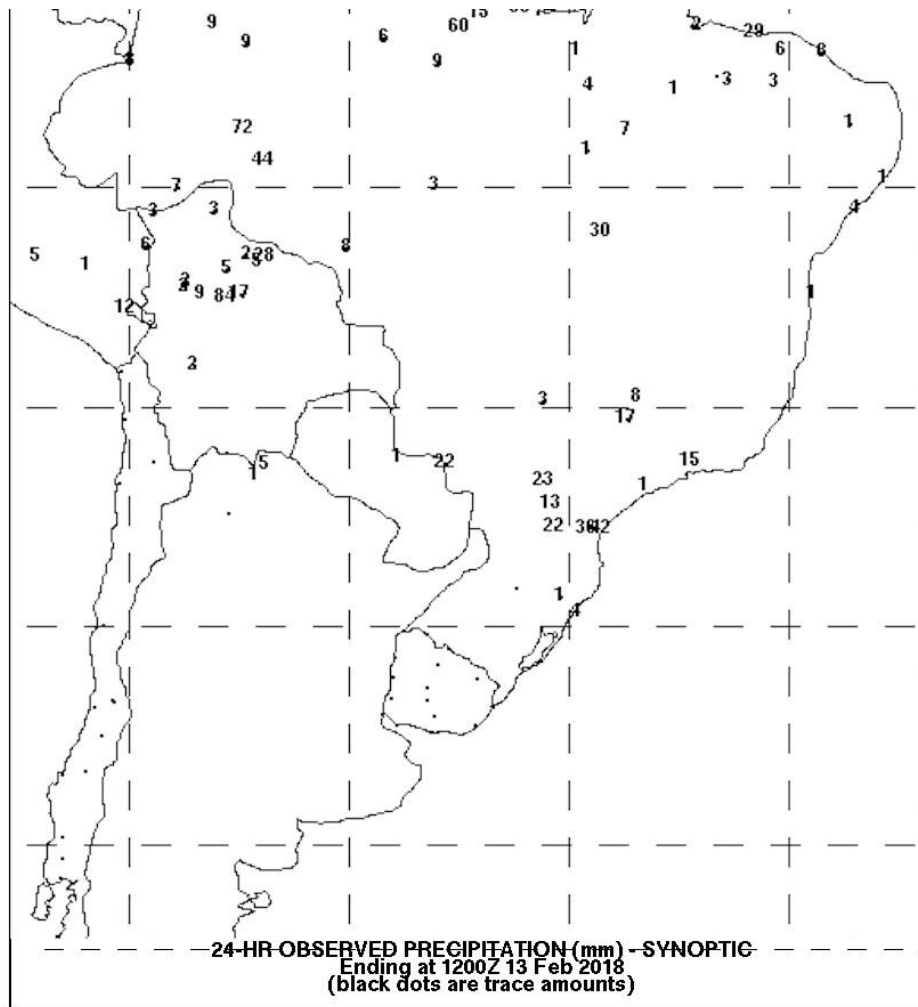
24-hour Precipitation Analysis

Observed precipitation (inches) through 12 UTC 11 Feb 2018



S.AMERICA RAINFALL FEB 13 ENDING 1200 UTC

All of Argentina was dry as was all of southwest Brazil. Significant rain of 0.50-1.0"/ 12-25mm fell over 60% of Parana .. and 6-15mm/ 0.25-0.60" rain fell over 50% of western Sao Paulo.



MID MORNING SATELLITE FEB13

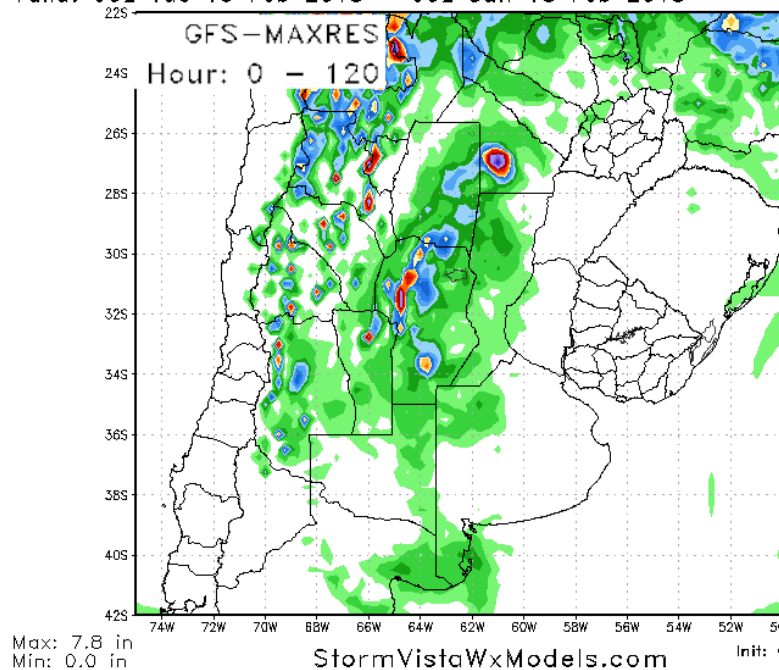
The TUESDAY morning satellite shows all of Argentina is 100% clear as is all of Paraguay. There were some low clouds over eastern RGDS.. Santa Catarina and Parana. Most of Brazil saw partly sunny skies with No storms developing at this time

1-5 DAY RAINFALL

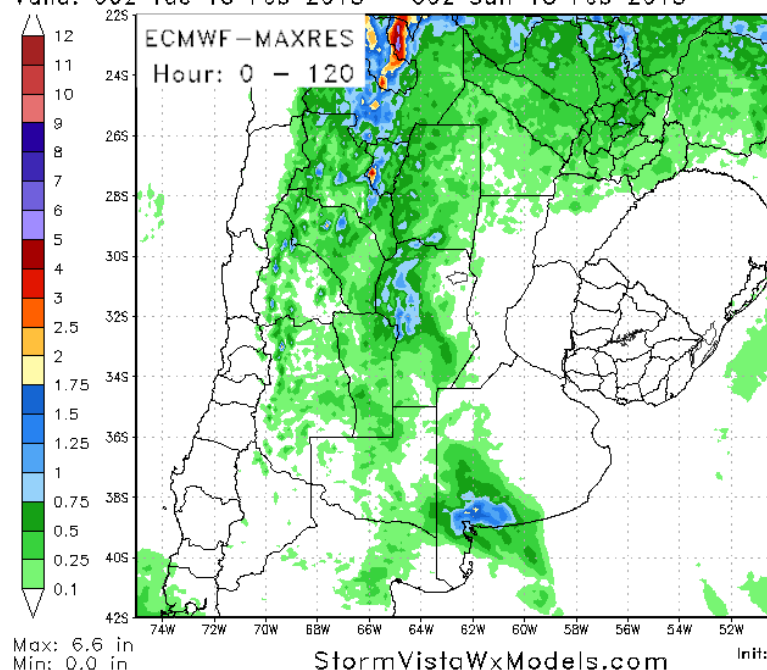
The forecast for the 1-5D for the most part unchanged from yesterday. Significant portions of Central Eastern Northern Argentina are completely dry all other areas see some light rain showers. Both models to have a cluster of storms which develop Saturday, February 17 over central and northern Cordoba. As is typically the case the GFS has somewhat heavier rains and the European but generally the rains are in the 1-2"/ 25-50mm category. In Brazil and Paraguay all of southeastern Brazil is dry or mostly dry as is eastern half of Paraguay. Both models continue show a weak plume or band of rains continuing over Sao Paulo into MGDS but this activity is falling apart in weakening. Rainfall amounts are only in the 0.85-2.0"/ 20-50mm range with 50-60% coverage at best. Large portions of eastern Mato Grosso Goias Minas Gerais and Bahia are 100% dry.

ARGENTINA

120 Hour Total Precipitation (in)
Valid: 00z Tue 13 Feb 2018 – 00z Sun 18 Feb 2018



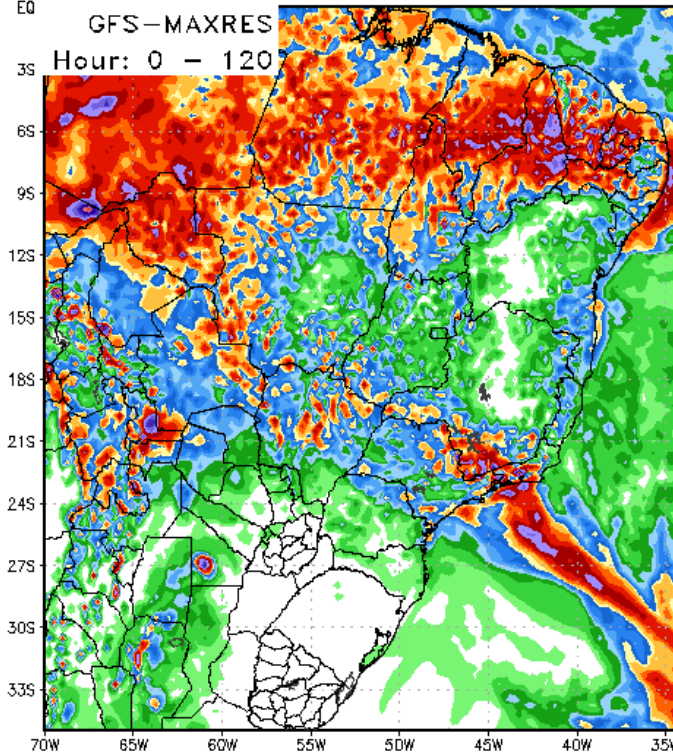
120 Hour Total Precipitation (in)
Valid: 00z Tue 13 Feb 2018 – 00z Sun 18 Feb 2018



BRAZIL

120 Hour Total Precipitation (in)

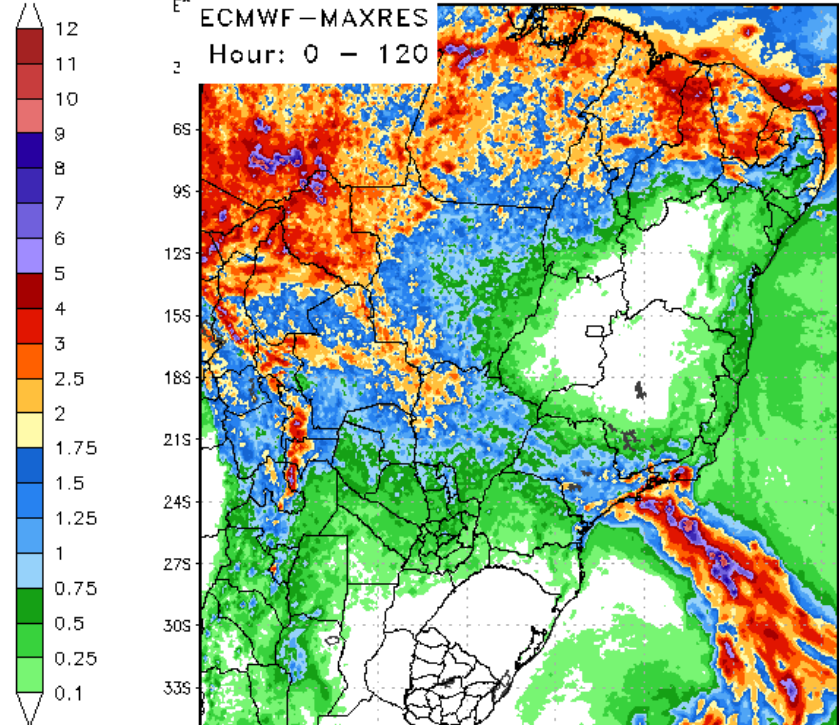
Valid: 00z Tue 13 Feb 2018 – 00z Sun 18 Feb 2018



StormVistaWxModels.com

120 Hour Total Precipitation (in)

Valid: 00z Tue 13 Feb 2018 – 00z Sun 18 Feb 2018



StormVistaWxModels.com

6-10 DAY

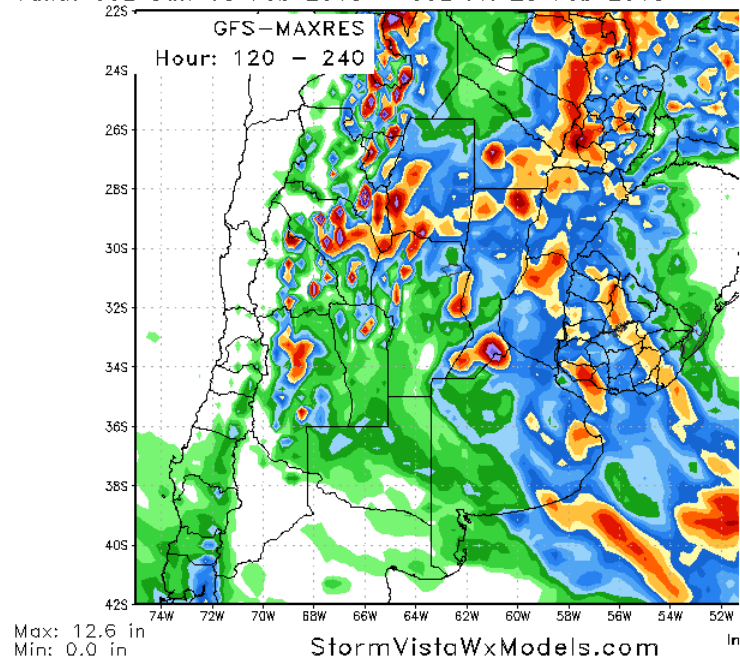
The morning GFS model is quite wet for much of Argentina with large areas of 1-3"/25-75mm rains with 70% coverage for eastern Chaco and Formosa Santa Fe Entre Rios Corrientes and eastern Buenos Aires. But as you can see the operational European model is

substantially different. It has large areas of light rains generally under 20mm/ 0.75" with some locally heavier amounts over southwestern Buenos Aires and over northeastern Argentina.

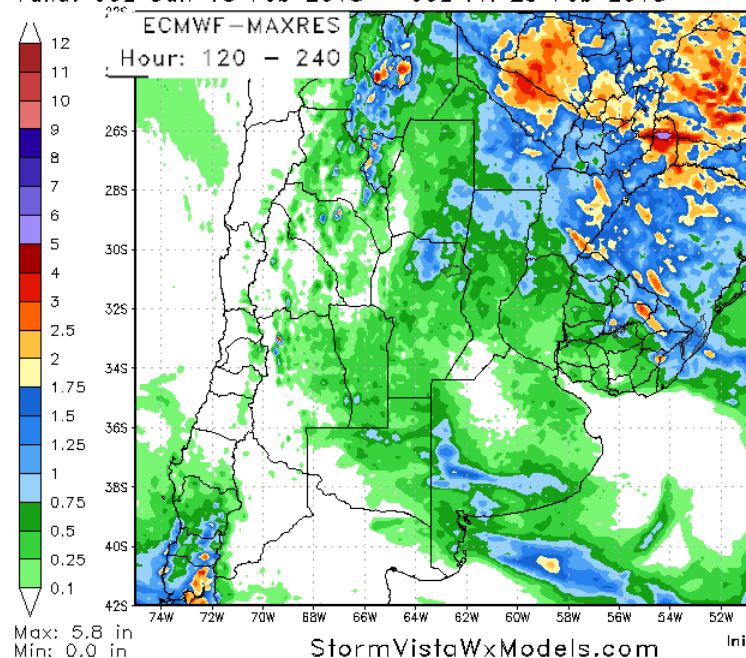
In Brazil the model agreement is also not good. The rainfall shield is similar but the amounts are drastically different. But as you can see the GFS model has a large area 2-5"/ 50-125mm with 75% coverage in Minas Gerais Sao Paulo southern Goias MGDS and Mato Grosso.. with 4-8"/ 100-200mm over Tocantins and northern Goias. The European operational model for Brazil has rainfall amounts ranging from 1-3"/ 25-75mm with 60 to 70% coverage over all of Brazil except for northern Minas Gerais and Bahia..

ARGENTINA

120 Hour Total Precipitation (in)
Valid: 00z Sun 18 Feb 2018 – 00z Fri 23 Feb 2018

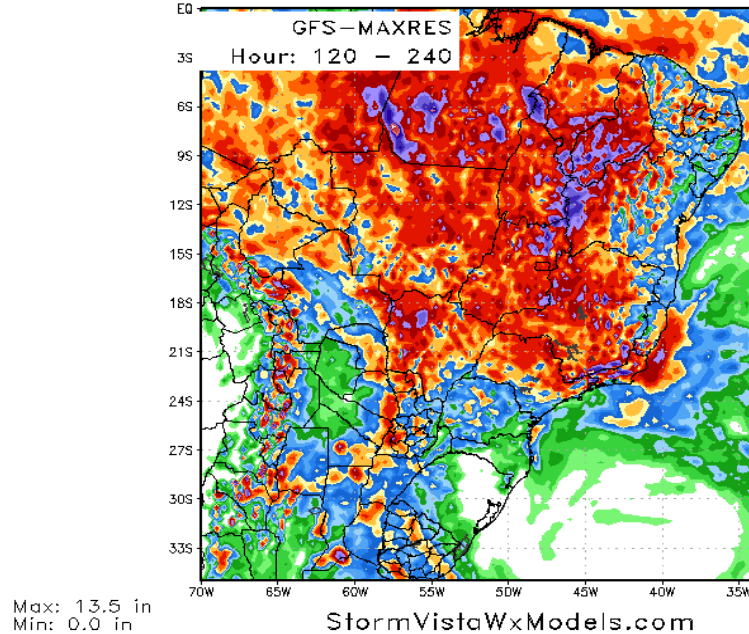


120 Hour Total Precipitation (in)
Valid: 00z Sun 18 Feb 2018 – 00z Fri 23 Feb 2018

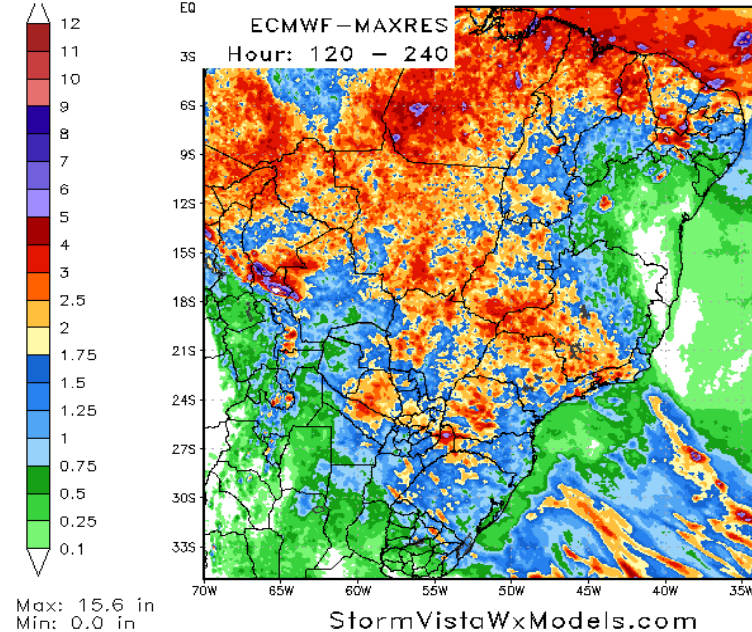


BRAZIL

120 Hour Total Precipitation (in)
Valid: 00z Sun 18 Feb 2018 – 00z Fri 23 Feb 2018



120 Hour Total Precipitation (in)
Valid: 00z Sun 18 Feb 2018 – 00z Fri 23 Feb 2018

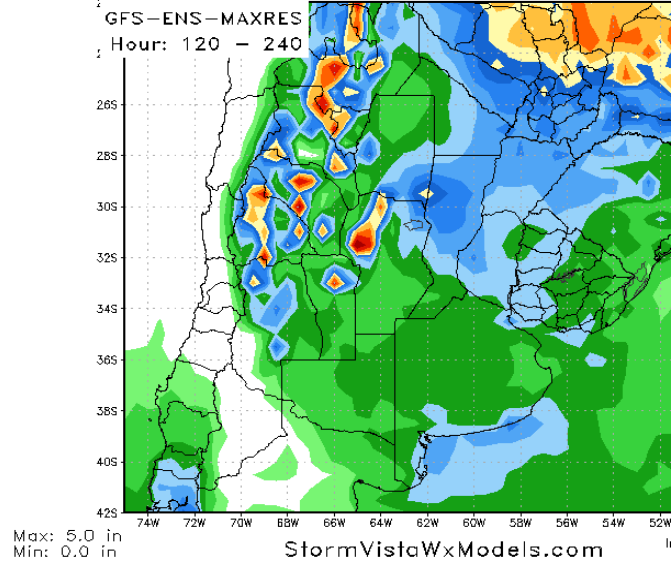


6-10 DAY ENSEMBLE

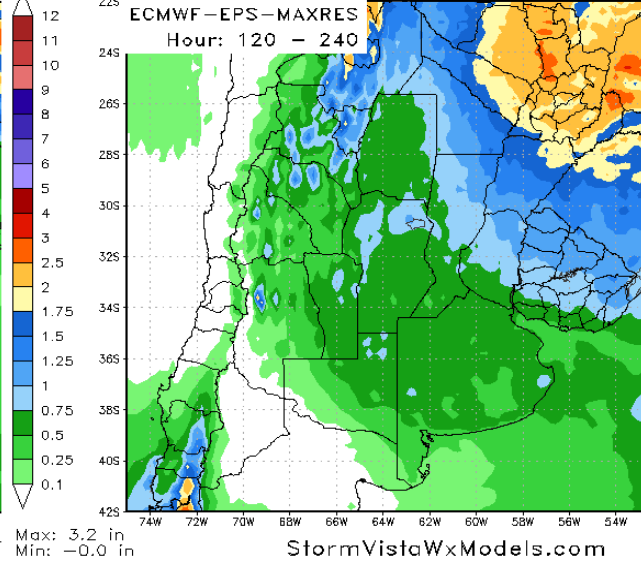
The GFS ensemble data is fairly close to the European ensemble data in Argentina. Notice that the GFS ensemble does NOT show significant rains over central and Eastern Argentina. It is not completely dry and it does have 1-2"/ 25-50mm over northeast Cordoba into northern Santa Fe and into northeast Argentina. The European ensembles actually quite similar to this but again it should be pointed out that the European ensemble does not show widespread 1 -3"/ 25-75mm rains over most of central and eastern Argentina.

The model data in Brazil is also in rather good agreement. Notice that most areas do see either a moderate or significant rain with the only exception being Bahia. The GFS ensemble does have some areas of greater than 3"/ 75mm rains over portions of Mato Grosso Goias and Tocantins whereas the European model does not. But outside of that the agreement here is pretty strong.

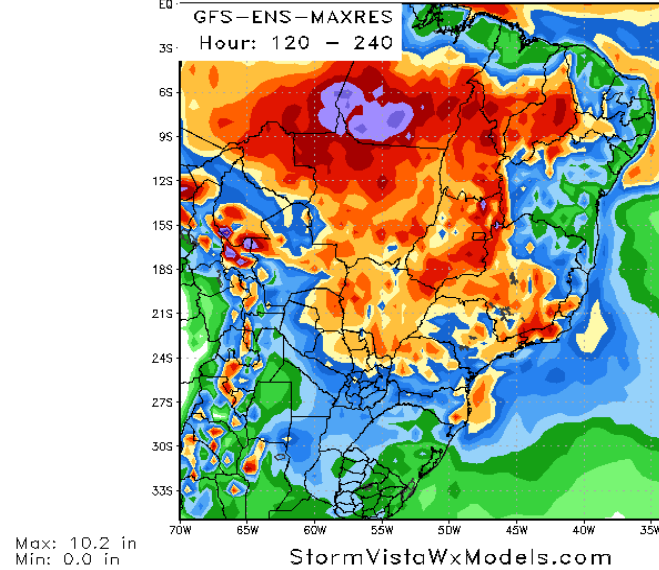
120 Hour Total Precipitation (in)
Valid: 00z Sun 18 Feb 2018 – 00z Fri 23 Feb 2018



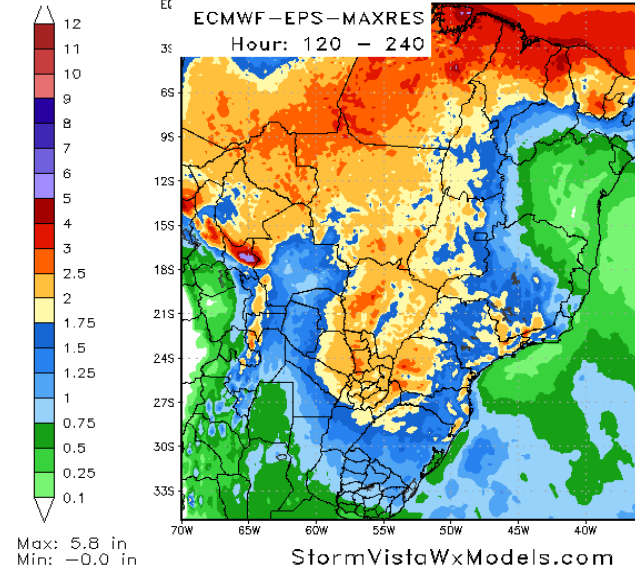
120 Hour Total Precipitation (in)
Valid: 00z Sun 18 Feb 2018 – 00z Fri 23 Feb 2018



120 Hour Total Precipitation (in)
Valid: 00z Sun 18 Feb 2018 – 00z Fri 23 Feb 2018



120 Hour Total Precipitation (in)
Valid: 00z Sun 18 Feb 2018 – 00z Fri 23 Feb 2018

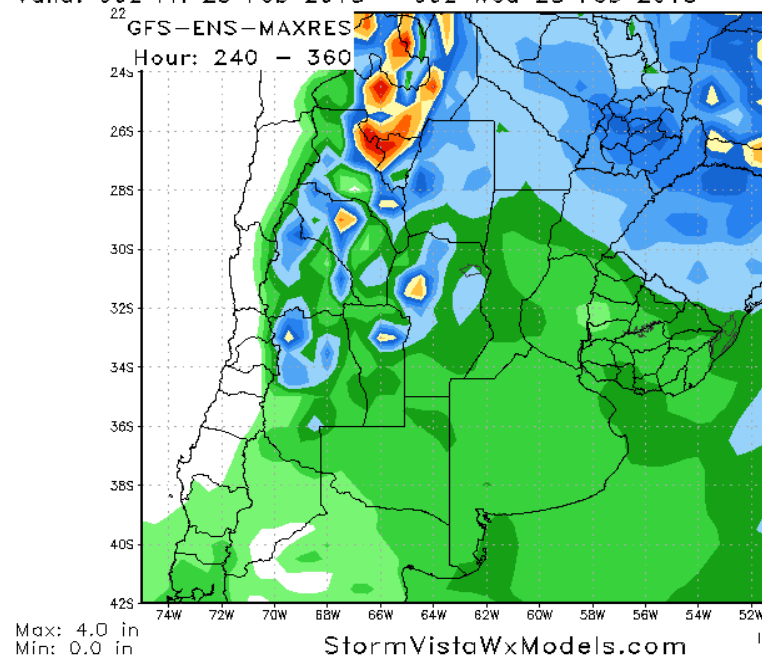


11-15 DAY ENSEMBLE

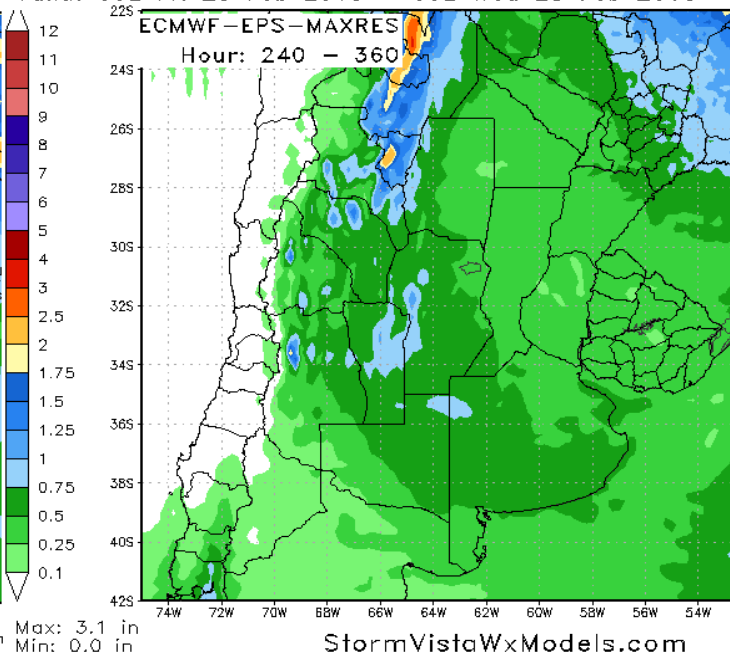
Both models show some areas of light to moderate rain over Argentina but none of the rain appears to be significant or widespread which is really what Argentina needs. This will be especially important if in fact the 6-10D is not nearly as wet as what the models are depicting. It is likely that the operational GFS is overdoing the rain in the 6-10d and the GFS and European ensembles are not that wet. So a lack of rain here in the 11 to 15D.. which is what these models are showing ...would not be good for Argentina. The GFS ensemble has a decent cluster of storms over northwest half of Cordoba that drops 1-2"/25-50mm... and rainfall over 1"/ 25mm over far northern Argentina BUT most of central and eastern Argentina is pretty dry. The European has some moderate rains over western Buenos Aires Cordoba and La Pampa but again this is not significant rainfall. Brazil continues to look ideal with good rains of 1-3"/ 25-75mm rains over southern Minas Gerais Sao Paulo into southern Goias northern MGDS and southern Mato Grosso

ARGENTINA

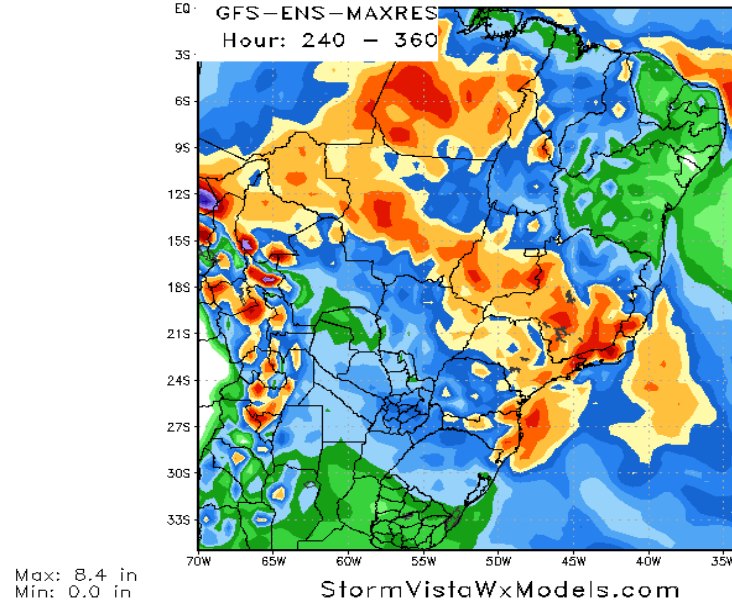
120 Hour Total Precipitation (in)
Valid: 00z Fri 23 Feb 2018 – 00z Wed 28 Feb 2018



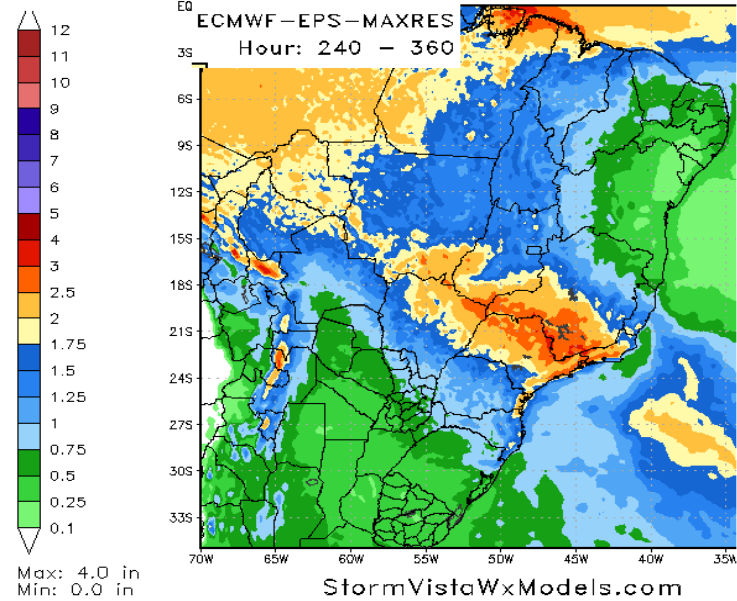
120 Hour Total Precipitation (in)
Valid: 00z Fri 23 Feb 2018 – 00z Wed 28 Feb 2018



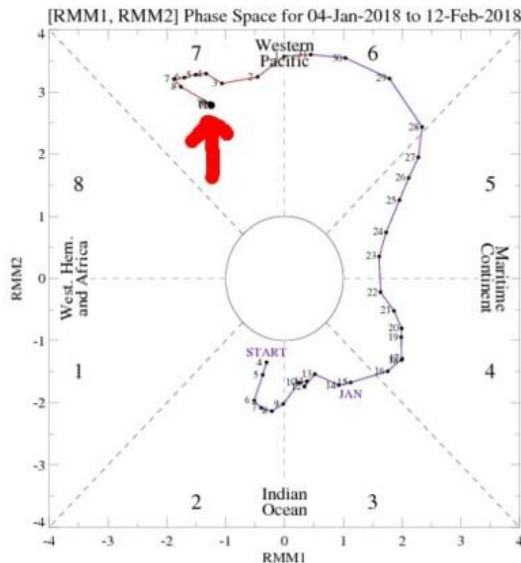
120 Hour Total Precipitation (in)
Valid: 00z Fri 23 Feb 2018 – 00z Wed 28 Feb 2018
GFS-ENS-MAXRES
Hour: 240 – 360



120 Hour Total Precipitation (in)
Valid: 00z Fri 23 Feb 2018 – 00z Wed 28 Feb 2018
ECMWF-EPS-MAXRES
Hour: 240 – 360



NEW MJO MODELS



Now let's look at the latest MJO forecast models and see what if anything has changed. This first image shows the current plot and position of MJO. (See red arrow). What is important to notice here is that over the past few days the current impulse has turned away from Phase 8 AND has turned towards the Neutral circle. This indicates significant weakening.

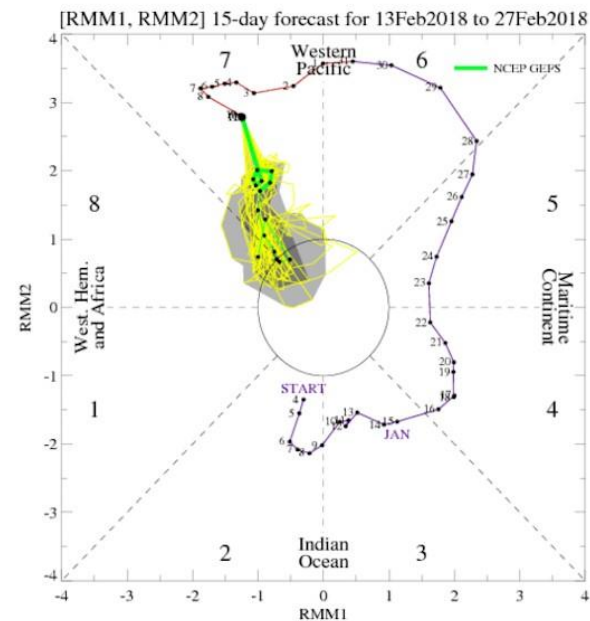
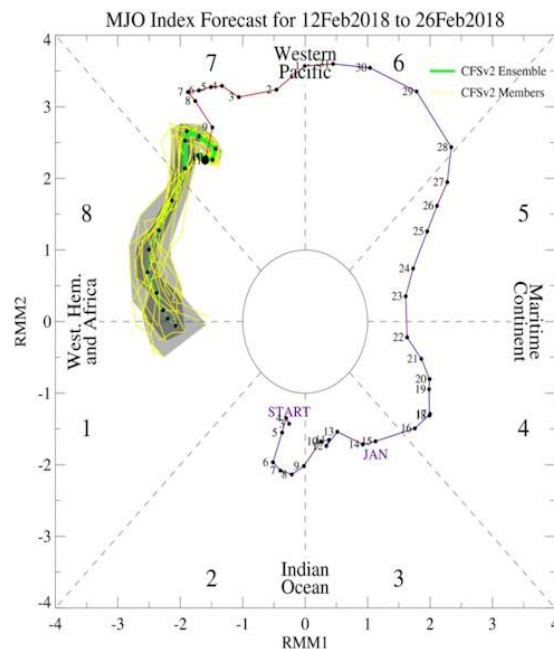
As we talked about over the past 2 weeks there has been significant model disagreement as to what is going to happen to this current very strong MJO impulse. Some weather models have shown the system breaking down sharply as it moves from

phase 7 into phase 8 and heading towards the Neutral circle. Other forecast models have shown impulse continuing into phase 8 into phase 1 with only slight weakening.

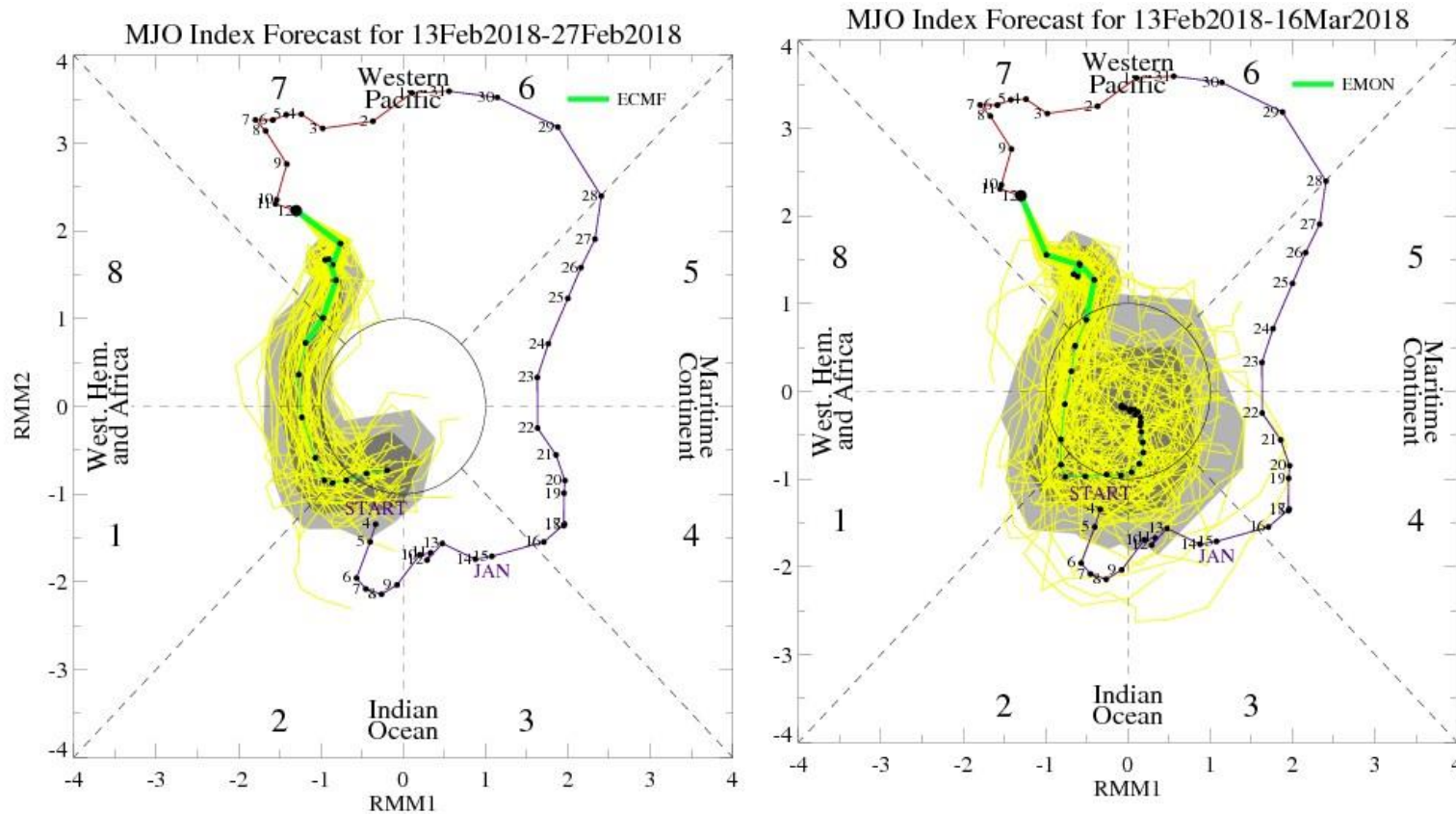
The fact that the MJO is now showing weakening by turning towards the Neutral Circle and turning away from Phase 8... supports the idea being shown by the last several runs of the European model MJO projections.

This image shows the latest MJO forecast projections from the CFS model. As you can see this model continues to keep the current MJO fairly strong moving into Phase 8 by the end of the month and implying a move into phase 1 for first half of March 2018. Obviously this would continue the dry pattern over most of Argentina and the wet pattern over a good portion of Brazil for another 30 to 45 days. Indeed looking at the extended CFS model for Brazil and Argentina ...it shows more dry conditions for these areas in Argentina and above normal rainfall over good portion of Brazil.

The image on the right hand side is the latest MJO projection from the GFS ensemble. Notice that it shows significant weakening of the current MJO impulse as it moves to the Neutral circle. This is a significant change because the last several runs of the GFS ensemble have shown the MJO impulse moving into phase 8 with only slight weakening. So this change is significant and leads me to believe that the Europeans depiction of how the current MJO is going to move and develop is probably correct.



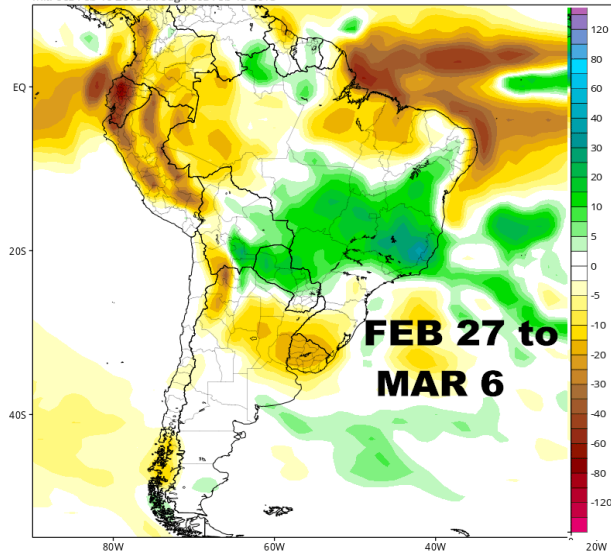
But here is the latest European model and European ensemble model MJO forecast projections. Notice that both of these models continue show significant weakening of the current MJO impulse with the feature barely making an into phase 8 with weak intensity OR moving into the Neutral circle itself by the end of the month.



This has significant implications for the weather patterns in the U.S. (more on this in next report) and for South America. It implies a breakdown of the drier pattern over Argentina and the rather active and wet pattern for Brazil during the month of March.

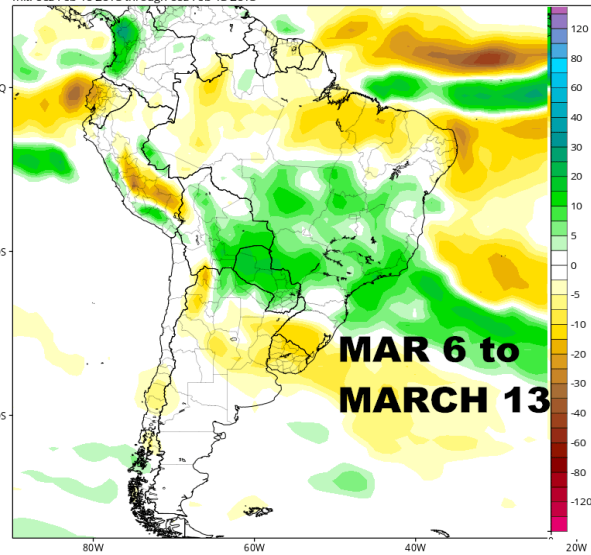
CFSv2 Accumulated Precip. Anomaly (mm) from 00z27Feb2018 to 00z06Mar2018 (Days 15-21)

Average of last 48 forecasts (12 runs x 4 members)
Init: 06z Feb 10 2018 through 00z Feb 13 2018



CFSv2 Accumulated Precip. Anomaly (mm) from 00z06Mar2018 to 00z13Mar2018 (Days 22-28)

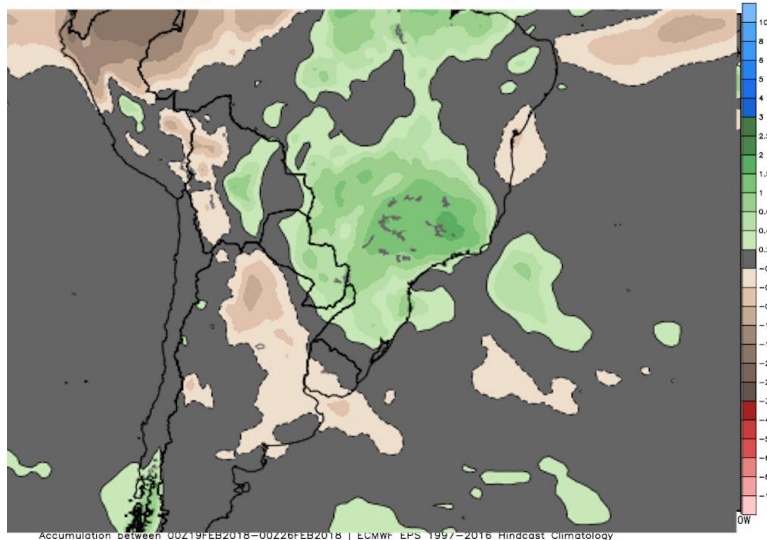
Average of last 48 forecasts (12 runs x 4 members)
Init: 06z Feb 10 2018 through 00z Feb 13 2018



That being said the European weekly model continues to show below normal rainfall conditions for most of Argentina for the next 4 weeks.

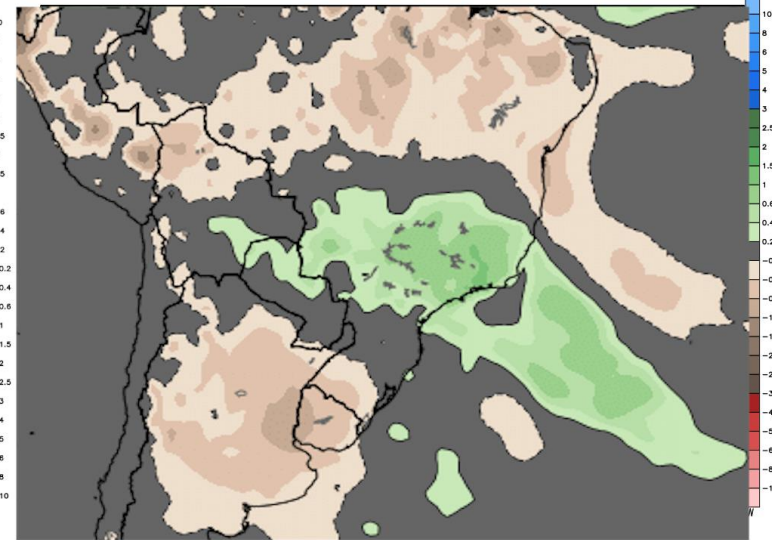
ECMWF EPS Ensemble Mean 7-day Avg Precipitation Anomaly [inch]
Init: 00Z12FEB2018 -- [168] hr --> Valid on Mon 00Z26FEB2018 Day 0 - Day 7

Min|Max Anom: -2.4 | 3.5 inch



ECMWF EPS Ensemble Mean 7-day Avg Precipitation Anomaly [inch]
Init: 00Z12FEB2018 -- [252] hr --> Valid on Mon 00Z05MAR2018 Day 3.5 - Day 10.5

Min|Max Anom: -6.7 | 2.9 inch



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