Anomalous tropical surge of warmth and moisture toward California and the Intermountain West 6–7 April 2018:

TY Jelawat (http://agora.ex.nii.ac.jp/digital-typhoon/summary/wnp/s/201803.html.en)

Sheldon Kusselson post to map from 6 April 2018:

I only took a look at a couple of Polar orbiting soundings from this morning just off central California coast

at: http://www.ospo.noaa.gov/Products/atmosphere/soundings/atovs/pskewt/N19/G2 1R35.html with one at 36.5N/133.5W showing an 850 temp of 15C, one at 36.5N/130.5 showing an 850 hPa temp of 13C and another at 36.5N/132.5W showing 16C at 850 hPa.

More detailed look at those soundings can be found at:

http://www.ospo.noaa.gov/data/soundings/atovs/pskewt/poes\_skewt\_img/N19/g1912 7.gif

http://www.ospo.noaa.gov/data/soundings/atovs/pskewt/poes\_skewt\_img/N19/g1913 0.gif

http://www.ospo.noaa.gov/data/soundings/atovs/pskewt/poes\_skewt\_img/N19/g1912 8.gif

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Cliff Mass post to map from 6 April 2018: Folks

This is truly an historic event, not only in Utah but for much of central/northern CA. The UW WRF run for today is unprecedented in terms of the width and magnitude of the high IWV values (attached). The precip water amounts at Oakland this morning (attached) were the highest ever observed between November 1 and June 1---which encompasses the wet season. The progs suggest it will be higher at 00 Z later today (around 1.7 inches). Think about it...**the highest precipitable water in any atmospheric river during the wet season in California.** There are higher PW values in summer, but they don't count....practically no rain then. On the other hand, the precipitation amounts will be large but not unprecedented, because IVTs are modest since the onshore winds are modest. Finally, I should note that the numerical guidance has been extraordinarily good for this event. Now if I was Lance I would be asking: what created this extreme event? ...cliff

On 4/6/18 8:30 AM, Jim Steenburgh wrote:

Mappers:

Everyone is well aware of the warm storm/atmospheric river event in California, but the forecasts for Utah tomorrow are pretty bewildering

with warmth and moisture levels that are deep into outlier territory.

Attached is a screenshot of the NAM forecast sounding for 2100 UTC (3 PM MDT) tomorrow afternoon along with the climatology of PW at the Salt Lake City international airport (from SPC). We have a fully saturated column through the troposphere and a PW of 25 mm/1 inch. I've identified that on the climatology. We have never seen such values here in April. In fact, they have only been achieved from mid May through September. Snow levels tomorrow will likely reach 10,000-11,000 feet which is also quite remarkable. Our 700-mb temperatures are not in record territory, but they may reach  $>4^{\circ}$ C with saturation, which is also likely rare if not unprecedented.

Jim

UW WRF-GFS 36km Domain Fest: 12 h Column-integrated water vapor (mm) 850 mb Temperature (C)



1.

3. Jim Steenburg post to map from 6 April 2018

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