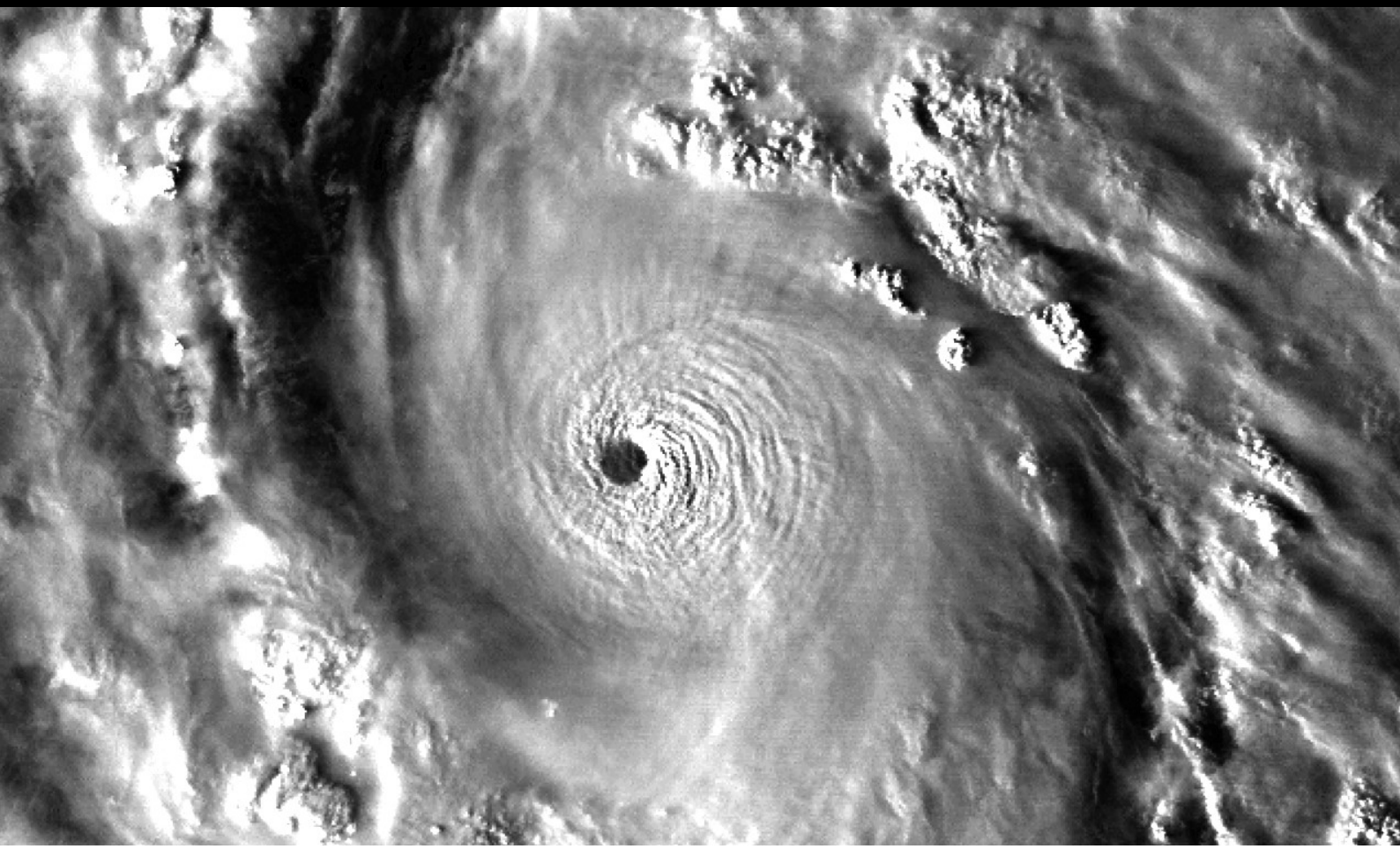
2015

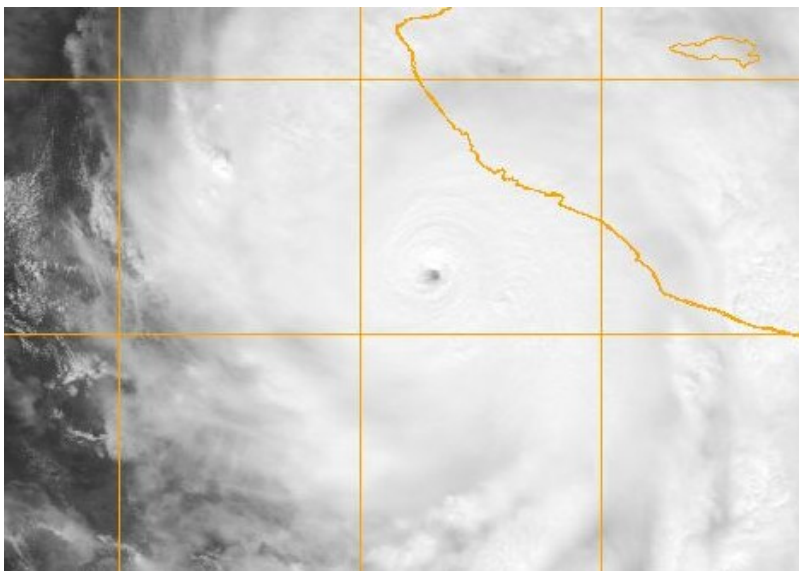
Force Thirteen World Cyclone Report



A report on all cyclones that formed in 2015, with detailed season statistics and records that were achieved worldwide this year.

Compiled by Nathan Foy at Force Thirteen, December 2015
Direct contact: force-13@hotmail.co.uk
See last page of document for more contact details

Cover photo: Enhanced SSEC visible image of Hurricane Patricia at around 01:00 UTC on October 23, 2015.
Below, Navy image of Hurricane Patricia near peak intensity at 18:00 UTC on October 23, 2015



Contents

1. Background

Activity in 2015 has been higher than average, mainly due to Pacific development as a result of a very broad and centrally located El Niño. This is at least part of the reason that major hurricane strength cyclones has been the highest in the reliable record spanning 36 years.
The amount of Category 4 storms is also believed to be the highest in that time, however, Category 5s and all hurricane strength totals remain below a record threshold.

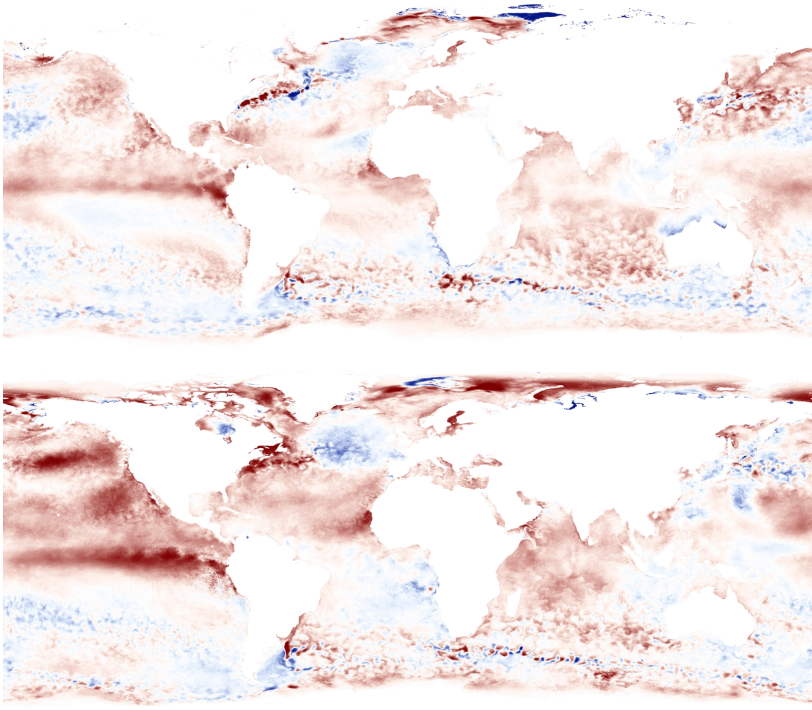
Early in the year, Cyclones Bansi and Eunice formed in the South-West Indian Ocean, marking the first time since 2005 that two Category 5 storms formed in the SWIO in the same year, and the first time it has occurred in a single season since 1995-96.

Cyclone Pam blasted through Vanuatu in mid-March, becoming the second strongest cyclone in this area.

Typhoon Maysak became one of the strongest typhoons to form at the time of year, in late March.

Several other Category 5 storms formed this year, as well as many major cyclones, capped off with Hurricane Patricia in the Eastern Pacific, which became the strongest storm ever recorded by satellites.

Most of the strongest storms occurred in the Pacific in 2015, at least partially due to the El Niño event.



Top image: Sea Surface Temperature anomalies in January 2015, versus the lower image, showing SST anomalies in October 2015. The large El Niño event became more pronounced throughout the year in the Eastern Pacific, and is at least the third strongest recorded.

The Atlantic remained quiet as expected, but much like the 2009 and 1997 seasons, also dominated by an El Niño, there was still a major hurricane recorded. In the case of 2015, there were two: Hurricane Danny and Hurricane Joaquin.

This year's storm activity does draw further parallels with 1997. In that year, the Western Pacific had a record number of Category 5 storms, and for a time it appeared that 2015 may approach that. However, due to the slightly unexpected lack of Category 5 storms later in the season, this didn't materialise and the worldwide total for 2015 remains at 9, four away from the record set that year.
Also, 1997 featured several substantial Eastern Pacific storms, though any records that were set that year were probably broken by 2015, which is also tied with 1992 for the most active year on record if one was to include the Central Pacific, which did exhibit record activity.

In the early part of the year, water temperatures in the South Atlantic were slightly above normal, and two subtropical cyclones, Bapo and Cari, formed in the area. These storms were short lived.

In May, a storm of unknown intensity formed in the South-East Pacific Ocean. Whilst there was no official name, its unofficial name is Katie. Subtropical in nature, this storm was believed to have winds of around 50mph.

It's of our belief that the nature of this year's El Niño significantly contributed to the record activity exhibited in the Pacific Ocean, which covered a broader area than the 1997 event, though is not necessarily the strongest. However, it is the strongest such event yet recorded in the Nino 3.4 region.

2. The 2015 Datasheet

Like last year, we have compiled a datasheet showing all the storms of 2015 based on several criteria. This provides easy access to particular records about storms that occurred this year.
The columns, reading from left to right, show: The storm name, basin of formation, date of formation (year, month, day), date of dissipation (year, month, day), Peak intensity in miles per hour, lowest central pressure in millibars, Saffir-Simpson Hurricane Wind Scale Category, and secondary peak in mph and mb.

		Formed			Dissipated			Intensity				
Name	Basin	Year	M	D	Year	M	D	Peak mph	Low mb	SSHS	Sec mph	Sec mb
Patricia	EP	2015	10	20	2015	10	24	200	879	C5		
Soudelor	WP	2015	7	30	2015	8	8	180	900	C5	130	937
Pam	SP	2015	3	9	2015	3	15	165	896	C5		
Eunice	SI	2015	1	27	2015	2	2	160	900	C5		
Maysak	WP	2015	3	27	2015	4	5	160	910	C5		
Bansi	SI	2015	1	11	2015	1	18	160	918	C5		
Noul	WP	2015	5	3	2015	5	12	160	918	C5		
Dolphin	WP	2015	5	7	2015	5	18	160	918	C5		
Atsani	WP	2015	8	14	2015	8	25	160	918	C5		
Chapala	NI	2015	10	28	2015	11	3	155	922	C4		
Nangka	WP	2015	7	3	2015	7	18	155	922	C4	120	944
Joaquin	AL	2015	9	28	2015	10	8	155	931	C4	130	935
Koppu	WP	2015	10	13	2015	10	21	150	925	C4	105	956
Champi	WP	2015	10	13	2015	10	24	150	926	C4	115	948
Jimena	EP	2015	8	26	2015	9	10	150	936	C4		
Olaf	EP	2015	10	15	2015	10	27	150	938	C4	120	955
Dujuan	WP	2015	9	21	2015	9	29	145	925	C4		
Melor	WP	2015	12	12	2015	12	17	145	929	C4	130	935
Sandra	EP	2015	11	23	2015	11	28	145	935	C4		
Blanca	EP	2015	5	31	2015	6	9	145	936	C4	130	943
Andres	EP	2015	5	28	2015	6	4	145	937	C4		
Ignacio	EP	2015	8	25	2015	9	5	145	942	C4	75	980
Chan-Hom	WP	2015	6	30	2015	7	12	140	933	C4	75	974
Kilo	CP	2015	8	20	2015	9	11	140	940	C4	130	947
Hilda	EP	2015	8	6	2015	8	14	140	946	C4		
Marcia	SP	2015	2	18	2015	2	21	130	930	C4		
Goni	WP	2015	8	14	2015	8	25	130	930	C4	130	937
Quang	SI	2015	4	28	2015	5	1	130	935	C4		
In-fa	WP	2015	11	17	2015	11	26	130	935	C4		
Higos	WP	2015	2	7	2015	2	11	130	937	C4		
Mujigae	WP	2015	10	1	2015	10	4	130	937	C4		
Dolores	EP	2015	7	11	2015	7	19	130	946	C4		
Megh	NI	2015	11	5	2015	11	10	125	941	C3		

		Formed			Dissipated			Intensity				
Name	Basin	Year	M	D	Year	M	D	Peak mph	Low mb	SSHS	Sec mph	Sec mb
Linda	EP	2015	9	6	2015	9	10	125	950	C3		
Krovanh	WP	2015	9	14	2015	9	20	120	944	C3		
Lam	SI	2015	2	16	2015	2	19	115	943	C3		
Danny	AL	2015	8	18	2015	8	24	115	974	C3		
Oho	CP	2015	10	3	2015	10	7	110	957	C2		
Guillermo	EP	2015	7	30	2015	8	7	110	967	C2		
Ikola	SI	2015	4	6	2015	4	12	110	968	C2		
Ola	SP	2015	1	29	2015	2	3	105	955	C2		
Halola	CP	2015	7	9	2015	7	26	105	956	C2	100	959
Joalane	SI	2015	4	5	2015	4	8	105	962	C2		
Nathan	SP	2015	3	10	2015	3	24	105	963	C2		
Olwyn	SI	2015	3	11	2015	3	13	100	959	C2		
Carlos	EP	2015	6	10	2015	6	17	90	978	C1	85	978
Fred	AL	2015	8	30	2015	9	6	85	986	C1	40	1007
Choi-Wan	WP	2015	10	2	2015	10	7	80	965	C1		
Mekkhala	WP	2015	1	13	2015	1	18	80	970	C1		
Marty	EP	2015	9	26	2015	10	1	80	986	C1		
Linfa	WP	2015	7	2	2015	7	9	75	974	C1	60	985
Kate	AL	2015	11	9	2015	11	12	75	983	C1	75	999
Loke	CP	2015	8	21	2015	8	26	75	985	C1		
Annabelle	SI	2015	11	20	2015	11	24	70	986	TS		
Nora	EP	2015	10	9	2015	10	15	70	993	TS		
Glenda	SI	2015	2	24	2015	2	28	65	979	TS		
Ashobaa	NI	2015	6	7	2015	6	11	65	982	TS		
Niko	SP	2015	1	19	2015	1	25	65	982	TS		
Etau	WP	2015	9	6	2015	9	9	65	982	TS		
Solo	SP	2015	4	10	2015	4	12	65	985	TS		
Niala	CP	2015	9	24	2015	9	28	65	992	TS		
Chedza	SI	2015	1	16	2015	1	18	60	975	TS		
Bavi	WP	2015	3	11	2015	3	18	60	985	TS	60	985
Molave	WP	2015	8	7	2015	8	13	60	985	TS	50	989
Bill	AL	2015	6	16	2015	6	20	60	997	TS		
Ana	AL	2015	5	8	2015	5	11	60	998	TS		
Kevin	EP	2015	8	31	2015	9	5	60	998	TS		
Grace	AL	2015	9	5	2015	9	9	60	1000	TS		
Kujira	WP	2015	6	20	2015	6	24	50	985	TS	40	996
Diamondra	SI	2015	1	26	2015	1	29	50	986	TS		
Haishen	WP	2015	4	3	2015	4	6	50	989	TS		
Reuben	SP	2015	3	21	2015	3	23	50	990	TS		

		Formed			Dissipated			Intensity				
Name	Basin	Year	M	D	Year	M	D	Peak mph	Low mb	SSHS	Sec mph	Sec mb
Raquel	SP	2015	6	30	2015	7	6	50	995	TS		
Enrique	EP	2015	7	12	2015	7	18	50	1000	TS		
Ida	AL	2015	9	18	2015	9	27	50	1001	TS		
Claudette	AL	2015	7	13	2015	7	14	50	1003	TS		
Erika	AL	2015	8	25	2015	8	29	50	1003	TS	50	1006
Henri	AL	2015	9	9	2015	9	11	50	1003	TS		
Fundi	SI	2015	2	6	2015	2	8	45	985	TS		
Tuni	SP	2015	11	27	2015	11	29	45	991	TS		
Komen	NI	2015	7	29	2015	7	30	45	993	TS		
Haliba	SI	2015	3	8	2015	3	10	45	993	TS		
Bohale	SI	2015	12	10	2015	12	12	45	993	TS		
TS 12W	WP	2015	7	23	2015	7	25	45	993	TS		
03A	NI	2015	10	9	2015	10	11	40	996	TS		
15S	SI	2015	3	5	2015	3	7	40	996	TS		
Vamco	WP	2015	9	13	2015	9	14	40	996	TS		
Malia	CP	2015	9	19	2015	9	22	40	1001	TS		
Rick	EP	2015	11	18	2015	11	22	40	1002	TS		
Ela	CP	2015	7	8	2015	7	10	40	1003	TS		
Iune	CP	2015	7	9	2015	7	13	40	1003	TS		
Felicia	EP	2015	7	23	2015	7	25	40	1004	TS		
TD 14W	WP	2015	8	2	2015	8	4	35	1000	TD		
08-C	CP	2015	10	3	2015	10	3	35	1001	TD		
16-E	EP	2015	9	20	2015	9	21	35	1002	TD		
TD 11-E	EP	2015	8	16	2015	8	18	35	1003	TD		
TD Nine	AL	2015	9	16	2015	9	19	35	1006	TD		
TD 08-E	EP	2015	7	27	2015	7	30	35	1006	TD		
TD 29W	WP	2015	12	16	2015	12	18	30	1002	TD		
TD 26W	WP	2015	10	22	2015	10	22	30	1004	TD		

These intensity values are based upon existing information and our own analysis and is correct to our best estimations as of December 19, 2015. Many storms have their intensities measured by satellites alone, unless they make landfall or is intercepted by a research plane. Thus, most typhoons and southern hemisphere cyclones at peak intensity are merely estimates and may be higher or lower. In the case of Patricia, there is more certainty as Hurricane Hunters penetrated the storm when it had a central pressure of 879mb—the lowest pressure ever recorded in the Western Hemisphere.

2.2. Storms listed by amount of landfalls

Only storms that made landfalls are shown below.

		Formed			Dissipated			
Name	Basin	Year	M	D	Year	M	D	Landfalls
Melor	WP	2015	12	12	2015	12	17	5
Joaquin	AL	2015	9	28	2015	10	8	3
Olwyn	SI	2015	3	11	2015	3	13	3
Nathan	SP	2015	3	10	2015	3	24	3
Soudelor	WP	2015	7	30	2015	8	8	3
Goni	WP	2015	8	14	2015	8	25	3
Halola	CP	2015	7	9	2015	7	26	2
Blanca	EP	2015	5	31	2015	6	9	2
Megh	NI	2015	11	5	2015	11	10	2
Mekkhala	WP	2015	1	13	2015	1	18	2
Kujira	WP	2015	6	20	2015	6	24	2
Linfa	WP	2015	7	2	2015	7	9	2
Nangka	WP	2015	7	3	2015	7	18	2
Dujuan	WP	2015	9	21	2015	9	29	2
Mujigae	WP	2015	10	1	2015	10	4	2
Ana	AL	2015	5	8	2015	5	11	1
Bill	AL	2015	6	16	2015	6	20	1
Erika	AL	2015	8	25	2015	8	29	1
Carlos	EP	2015	6	10	2015	6	17	1
Patricia	EP	2015	10	20	2015	10	24	1
Komen	NI	2015	7	29	2015	7	30	1
Chapala	NI	2015	10	28	2015	11	3	1
Chedza	SI	2015	1	16	2015	1	18	1
Fundi	SI	2015	2	6	2015	2	8	1
Quang	SI	2015	4	28	2015	5	1	1
Lam	SI	2015	2	16	2015	2	19	1
Marcia	SP	2015	2	18	2015	2	21	1
Maysak	WP	2015	3	27	2015	4	5	1
Chan-Hom	WP	2015	6	30	2015	7	12	1
Etau	WP	2015	9	6	2015	9	9	1
Vamco	WP	2015	9	13	2015	9	14	1
Koppu	WP	2015	10	13	2015	10	21	1

Storms listed by countries affected

Only storms that affected land are shown below. A storm doesn't have to make landfall to affect land. A landfall occurs when the center of the eye or the center of circulation crosses over land, not if the peripheral or even central core of the storm moves over land.

		Formed			Dissipated			
Name	Basin	Year	M	D	Year	M	D	Countries
Chan-Hom	WP	2015	6	30	2015	7	12	7
Joaquin	AL	2015	9	28	2015	10	8	6
Goni	WP	2015	8	14	2015	8	25	6
Pam[1]	SP	2015	3	9	2015	3	15	4
Noul[2]	WP	2015	5	3	2015	5	12	4
Soudelor	WP	2015	7	30	2015	8	8	4
Erika	AL	2015	8	25	2015	8	29	3
Linfa	WP	2015	7	2	2015	7	9	3
Dujuan	WP	2015	9	21	2015	9	29	3
Megh	NI	2015	11	5	2015	11	10	2
Chedza	SI	2015	1	16	2015	1	18	2
Bavi	WP	2015	3	11	2015	3	18	2
Maysak	WP	2015	3	27	2015	4	5	2
Kujira	WP	2015	6	20	2015	6	24	2
Nangka	WP	2015	7	3	2015	7	18	2
Mujigae	WP	2015	10	1	2015	10	4	2
TD 29W	WP	2015	12	16	2015	12	18	1
Ana	AL	2015	5	8	2015	5	11	1
Bill	AL	2015	6	16	2015	6	20	1
Fred	AL	2015	8	30	2015	9	6	1
Kate	AL	2015	11	9	2015	11	12	1
Halola	CP	2015	7	9	2015	7	26	1
Blanca	EP	2015	5	31	2015	6	9	1
Carlos	EP	2015	6	10	2015	6	17	1
Dolores	EP	2015	7	11	2015	7	19	1
Marty	EP	2015	9	26	2015	10	1	1
Patricia	EP	2015	10	20	2015	10	24	1
Ashobaa	NI	2015	6	7	2015	6	11	1
Komen	NI	2015	7	29	2015	7	30	1
Chapala	NI	2015	10	28	2015	11	3	1
Bansi	SI	2015	1	11	2015	1	18	1

		Formed			Dissipated			
Name	Basin	Year	M	D	Year	M	D	Countries
Fundi	SI	2015	2	6	2015	2	8	1
Haliba	SI	2015	3	8	2015	3	10	1
Olwyn	SI	2015	3	11	2015	3	13	1
Quang	SI	2015	4	28	2015	5	1	1
Lam	SI	2015	2	16	2015	2	19	1
Marcia	SP	2015	2	18	2015	2	21	1
Nathan	SP	2015	3	10	2015	3	24	1
Mekkhala	WP	2015	1	13	2015	1	18	1
Dolphin	WP	2015	5	7	2015	5	18	1
Etau	WP	2015	9	6	2015	9	9	1
Vamco	WP	2015	9	13	2015	9	14	1
Koppu	WP	2015	10	13	2015	10	21	1
Melor	WP	2015	12	12	2015	12	17	1

[1] Cyclone Pam was evaluated by Force Thirteen to have never made landfall during its lifetime, despite speculation that it may have made one or more landfalls in Vanuatu.

[2] Typhoon Noul was evaluated by Force Thirteen to have never made landfall during its lifetime, contrary to other agencies which reported a landfall on the northeastern tip of Cagayan, Luzon.

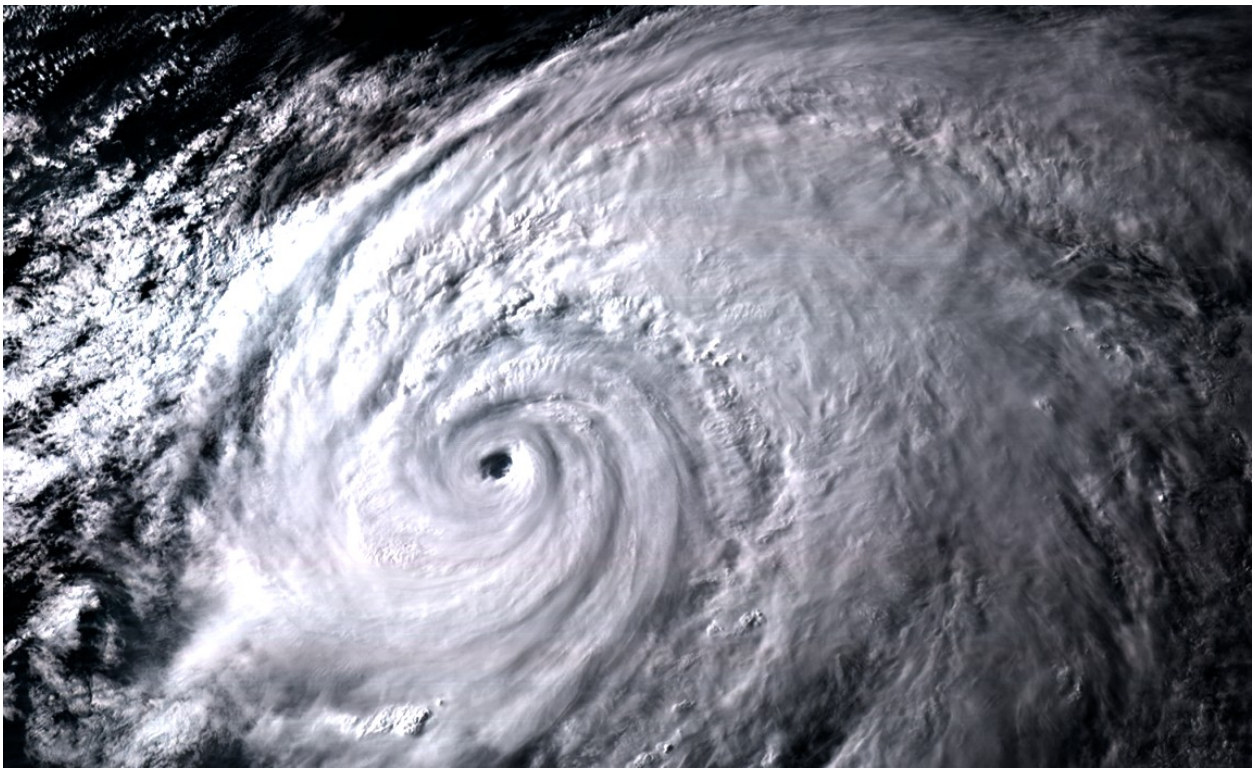


Image: Force Thirteen enhanced visible image of Typhoon Chan-Hom near peak intensity as a Category 4 storm in the Western Pacific. This storm affected seven countries (including Taiwan), the most in 2015. Himawari-8

2.3. Storms listed by death toll

Only storms that caused fatalities are listed below. Unconfirmed reports and missing persons are not counted towards these totals. Information is correct as of December 19, 2015

		Formed			Dissipated			
Name	Basin	Year	M	D	Year	M	D	Fatalities
Komen	NI	2015	7	29	2015	7	30	170
Chedza	SI	2015	1	16	2015	1	18	80
Koppu	WP	2015	10	13	2015	10	21	58
Melor	WP	2015	12	12	2015	12	17	42
Soudelor	WP	2015	7	30	2015	8	8	38
Erika	AL	2015	8	25	2015	8	29	35
Joaquin	AL	2015	9	28	2015	10	8	34
Goni	WP	2015	8	14	2015	8	25	34
Haliba	SI	2015	3	8	2015	3	10	26
Mujigae	WP	2015	10	1	2015	10	4	22
Megh	NI	2015	11	5	2015	11	10	18
Pam	SP	2015	3	9	2015	3	15	16
Vamco	WP	2015	9	13	2015	9	14	15
Patricia	EP	2015	10	20	2015	10	24	13
Bill	AL	2015	6	16	2015	6	20	9
Fred	AL	2015	8	30	2015	9	6	9
Chapala	NI	2015	10	28	2015	11	3	9
Etau	WP	2015	9	6	2015	9	9	8
Chan-Hom	WP	2015	6	30	2015	7	12	6
Fundi	SI	2015	2	6	2015	2	8	5
Maysak	WP	2015	3	27	2015	4	5	4
Mekkhala	WP	2015	1	13	2015	1	18	3
Dujuan	WP	2015	9	21	2015	9	29	3
Ana	AL	2015	5	8	2015	5	11	2
Noul	WP	2015	5	3	2015	5	12	2
Nangka	WP	2015	7	3	2015	7	18	2

Storms listed by injured persons

Only storms that caused injuries are listed below. Unconfirmed reports are not counted towards these totals. Due to scarcity of information for some storms, this information may not reflect the true situation, however of the storms we do have injury information on, it is likely to be accurate. Information is assumed correct as of December 19, 2015.

		Formed			Dissipated			
Name	Basin	Year	M	D	Year	M	D	Injured
Soudelor	WP	2015	7	30	2015	8	8	430
Chapala	NI	2015	10	28	2015	11	3	40
Melor	WP	2015	12	12	2015	12	17	24
Chan-Hom	WP	2015	6	30	2015	7	12	21
Erika	AL	2015	8	25	2015	8	29	13
Maysak	WP	2015	3	27	2015	4	5	10
Fred	AL	2015	8	30	2015	9	6	4
Marty	EP	2015	9	26	2015	10	1	3
Joaquin	AL	2015	9	28	2015	10	8	1
Carlos	EP	2015	6	10	2015	6	17	1
Patricia	EP	2015	10	20	2015	10	24	1
TD 29W	WP	2015	12	16	2015	12	18	Awaiting

Storms listed by missing persons

Only storms that have missing persons are listed below. Unconfirmed reports are not counted towards these totals. Due to scarcity of information for some storms, this information may not reflect the true situation, however of the storms we do have missing persons information on, it is likely to be accurate. Please note that missing persons are usually considered to be fatalities after a period, and this information may change. Information is assumed correct as of December 19, 2015.

		Formed			Dissipated			
Name	Basin	Year	M	D	Year	M	D	Missing
Erika	AL	2015	8	25	2015	8	29	35
Melor	WP	2015	12	12	2015	12	17	4

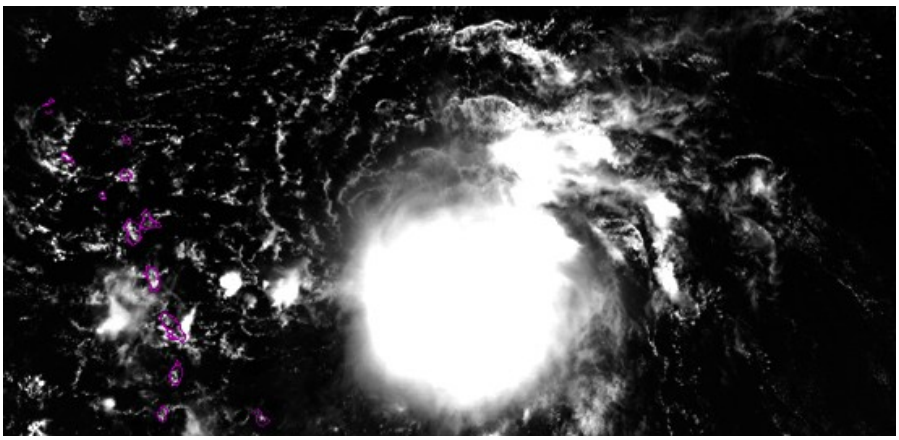


Image: Force Thirteen enhanced visible image of Tropical Storm Erika approaching the Lesser Antilles, later becoming the deadliest storm of the 2015 Atlantic Hurricane Season.
NOAA Floaters

2.4. Storms listed by monetary damages

Only storms that caused monetary damages are listed below. Unconfirmed numbers are not counted towards these totals. Due to scarcity of information for some Indian Ocean storms, this information may not reflect the true situation, however the rest of the storms are likely to be accurate. Values listed in *italics* are estimated numbers. Information is assumed correct as of December 19, 2015.

		Formed			Dissipated			
Name	Basin	Year	M	D	Year	M	D	Damages $m
Mujigae	WP	2015	10	1	2015	10	4	3690
Soudelor	WP	2015	7	30	2015	8	8	3200
Chan-Hom	WP	2015	6	30	2015	7	12	1460
Dujuan	WP	2015	9	21	2015	9	29	661
Marcia	SP	2015	2	18	2015	2	21	591
Erika	AL	2015	8	25	2015	8	29	511.7
Patricia	EP	2015	10	20	2015	10	24	407.4
Pam	SP	2015	3	9	2015	3	15	360
Goni	WP	2015	8	14	2015	8	25	293
Koppu	WP	2015	10	13	2015	10	21	236
Linfa	WP	2015	7	2	2015	7	9	218
Nangka	WP	2015	7	3	2015	7	18	151
Melor	WP	2015	12	12	2015	12	17	*110*
Etau	WP	2015	9	6	2015	9	9	98
Olwyn	SI	2015	3	11	2015	3	13	76
Lam	SI	2015	2	16	2015	2	19	64
Joaquin	AL	2015	9	28	2015	10	8	60
Chedza	SI	2015	1	16	2015	1	18	40
Noul	WP	2015	5	3	2015	5	12	23.6
Bill	AL	2015	6	16	2015	6	20	17.9
16-E	EP	2015	9	20	2015	9	21	17.7
Kujira	WP	2015	6	20	2015	6	24	14.4
Vamco	WP	2015	9	13	2015	9	14	14
Dolphin	WP	2015	5	7	2015	5	18	10
Maysak	WP	2015	3	27	2015	4	5	8.5
Mekkhala	WP	2015	1	13	2015	1	18	7.8
Halola	CP	2015	7	9	2015	7	26	1.2
Fred	AL	2015	8	30	2015	9	6	1.1
Carlos	EP	2015	6	10	2015	6	17	1.1
Bavi	WP	2015	3	11	2015	3	18	*0.1*

2.5. Storms listed by buildings damaged

Only storms that caused building damages are listed below. Unconfirmed numbers are not counted towards these totals. Due to scarcity of information for some storms, this information may not reflect the true situation. Values listed in *italics* are estimated numbers. Information is assumed correct as of December 19, 2015.

		Formed			Dissipated			
Name	Basin	Year	M	D	Year	M	D	Buildings dmg.
Melor	WP	2015	12	12	2015	12	17	181115
Komen	NI	2015	7	29	2015	7	30	55899
Chedza	SI	2015	1	16	2015	1	18	*48000*
Pam	SP	2015	3	9	2015	3	15	*40905*
Koppu	WP	2015	10	13	2015	10	21	17254
Marty	EP	2015	9	26	2015	10	1	*7800*
Patricia	EP	2015	10	20	2015	10	24	*7000*
Etau	WP	2015	9	6	2015	9	9	6717
Megh	NI	2015	11	5	2015	11	10	3000
Erika	AL	2015	8	25	2015	8	29	*2616*
Soudelor	WP	2015	7	30	2015	8	8	1850
Maysak	WP	2015	3	27	2015	4	5	*1700*
Chan-Hom	WP	2015	6	30	2015	7	12	1400
Fundi	SI	2015	2	6	2015	2	8	1200
Mujigae	WP	2015	10	1	2015	10	4	700
Mekkhala	WP	2015	1	13	2015	1	18	490
Vamco	WP	2015	9	13	2015	9	14	480
Kujira	WP	2015	6	20	2015	6	24	382
Chapala	NI	2015	10	28	2015	11	3	*350*
Dujuan	WP	2015	9	21	2015	9	29	322
Goni	WP	2015	8	14	2015	8	25	300
Nangka	WP	2015	7	3	2015	7	18	220
Joaquin	AL	2015	9	28	2015	10	8	*200*
Lam	SI	2015	2	16	2015	2	19	140
Bavi	WP	2015	3	11	2015	3	18	52
Fred	AL	2015	8	30	2015	9	6	*50*
Carlos	EP	2015	6	10	2015	6	17	*30*
Marcia	SP	2015	2	18	2015	2	21	*10*
Bill	AL	2015	6	16	2015	6	20	2
Ana	AL	2015	5	8	2015	5	11	1
TD 29W	WP	2015	12	16	2015	12	18	Awaiting

Storms listed by buildings destroyed

Only storms that caused building destruction are listed below. Unconfirmed numbers are not counted towards these totals. Due to scarcity of information for some storms, this information may not reflect the true situation. Values listed in *italics* are estimated numbers. Information is assumed correct as of December 19, 2015.

		Formed			Dissipated			
Name	Basin	Year	M	D	Year	M	D	Destroyed
Komen	NI	2015	7	29	2015	7	30	272488
Melor	WP	2015	12	12	2015	12	17	98371
Soudelor	WP	2015	7	30	2015	8	8	7618
Chedza	SI	2015	1	16	2015	1	18	4430
Patricia	EP	2015	10	20	2015	10	24	*2000*
Erika	AL	2015	8	25	2015	8	29	1713
Koppu	WP	2015	10	13	2015	10	21	1504
Pam	SP	2015	3	9	2015	3	15	1500
Maysak	WP	2015	3	27	2015	4	5	1148
Chan-Hom	WP	2015	6	30	2015	7	12	1000
Joaquin	AL	2015	9	28	2015	10	8	837
Megh	NI	2015	11	5	2015	11	10	500
Dujuan	WP	2015	9	21	2015	9	29	410
Linfa	WP	2015	7	2	2015	7	9	288
Chapala	NI	2015	10	28	2015	11	3	100
Kujira	WP	2015	6	20	2015	6	24	70
Mekkhala	WP	2015	1	13	2015	1	18	48
Carlos	EP	2015	6	10	2015	6	17	16
Lam	SI	2015	2	16	2015	2	19	6
Bavi	WP	2015	3	11	2015	3	18	5
Fred	AL	2015	8	30	2015	9	6	2
TD 29W	WP	2015	12	16	2015	12	18	Awaiting

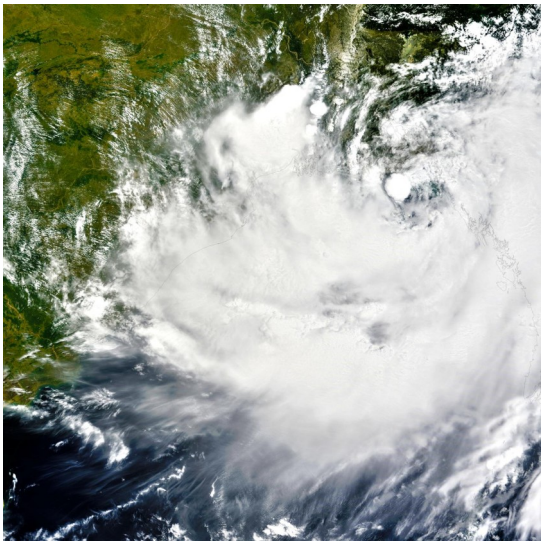


Image: Force Thirteen enhanced visible image of Tropical Cyclone Komen along the coast of Bangladesh, the storm would later become the deadliest worldwide in 2015. MODIS

2.6. Storms listed by evacuees

Only storms that caused known evacuations are listed below. Unconfirmed numbers are not counted towards these totals. Due to scarcity of information for many storms, this information may not reflect the true situation. Values listed in *italics* are estimated numbers. Information is assumed correct as of December 19, 2015.

		Formed			Dissipated			
Name	Basin	Year	M	D	Year	M	D	Evacuees
Melor	WP	2015	12	12	2015	12	17	742991
Soudelor	WP	2015	7	30	2015	8	8	696328
Etau	WP	2015	9	6	2015	9	9	183500
Nangka	WP	2015	7	3	2015	7	18	88100
Maysak	WP	2015	3	27	2015	4	5	24000
Koppu	WP	2015	10	13	2015	10	21	24000
Chapala	NI	2015	10	28	2015	11	3	18000
Patricia	EP	2015	10	20	2015	10	24	8500
Linfa	WP	2015	7	2	2015	7	9	*8015*
Noul	WP	2015	5	3	2015	5	12	3803
Dolphin	WP	2015	5	7	2015	5	18	1000
Bavi	WP	2015	3	11	2015	3	18	166
Bansi	SI	2015	1	11	2015	1	18	115
Joaquin	AL	2015	9	28	2015	10	8	20
TD 29W	WP	2015	12	16	2015	12	18	Awaiting

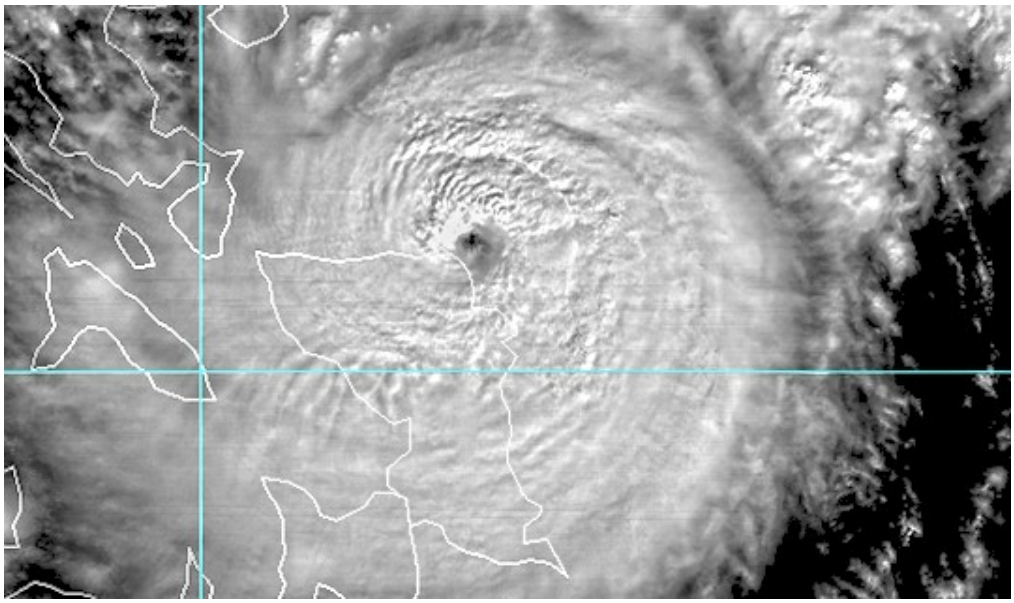
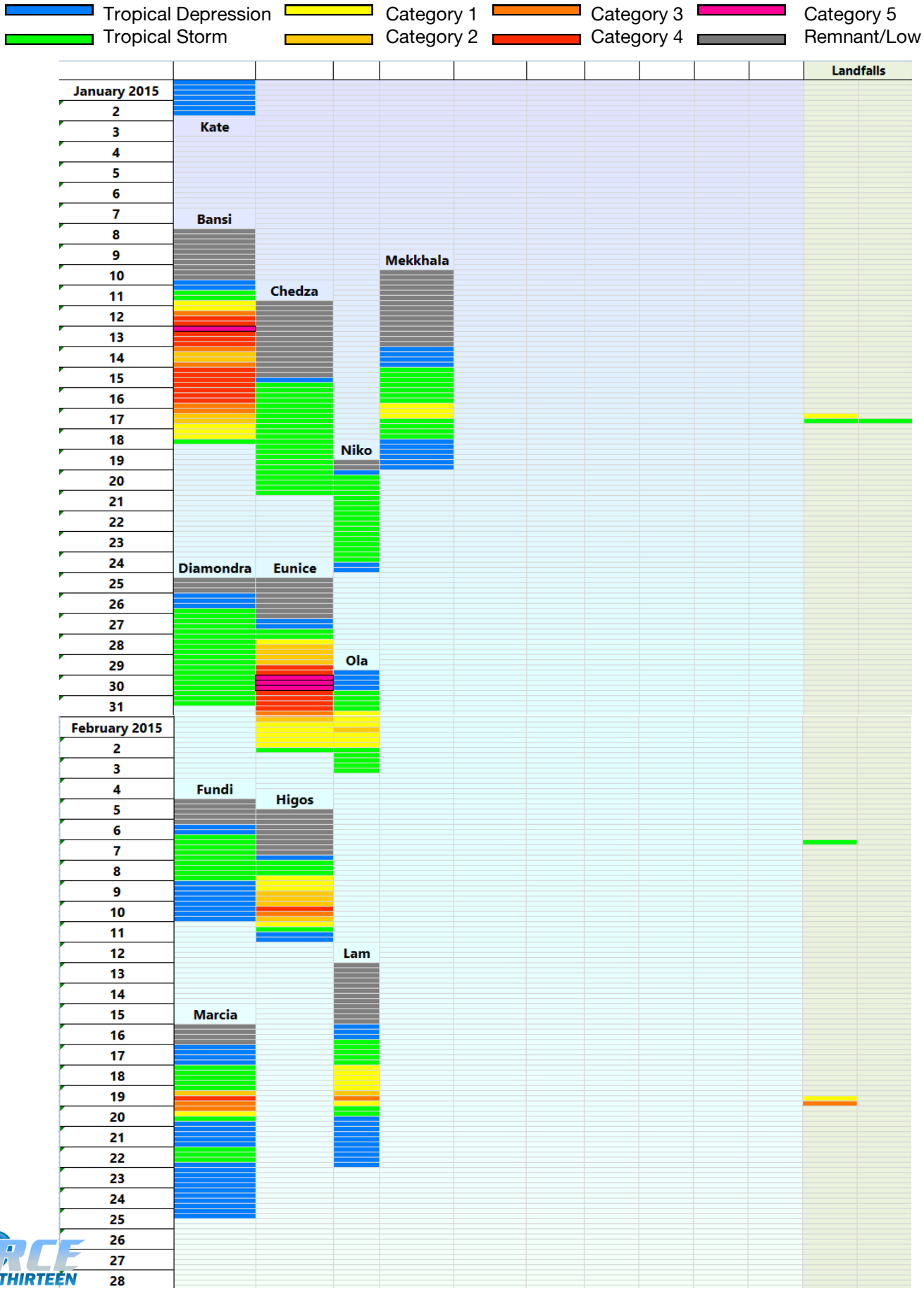


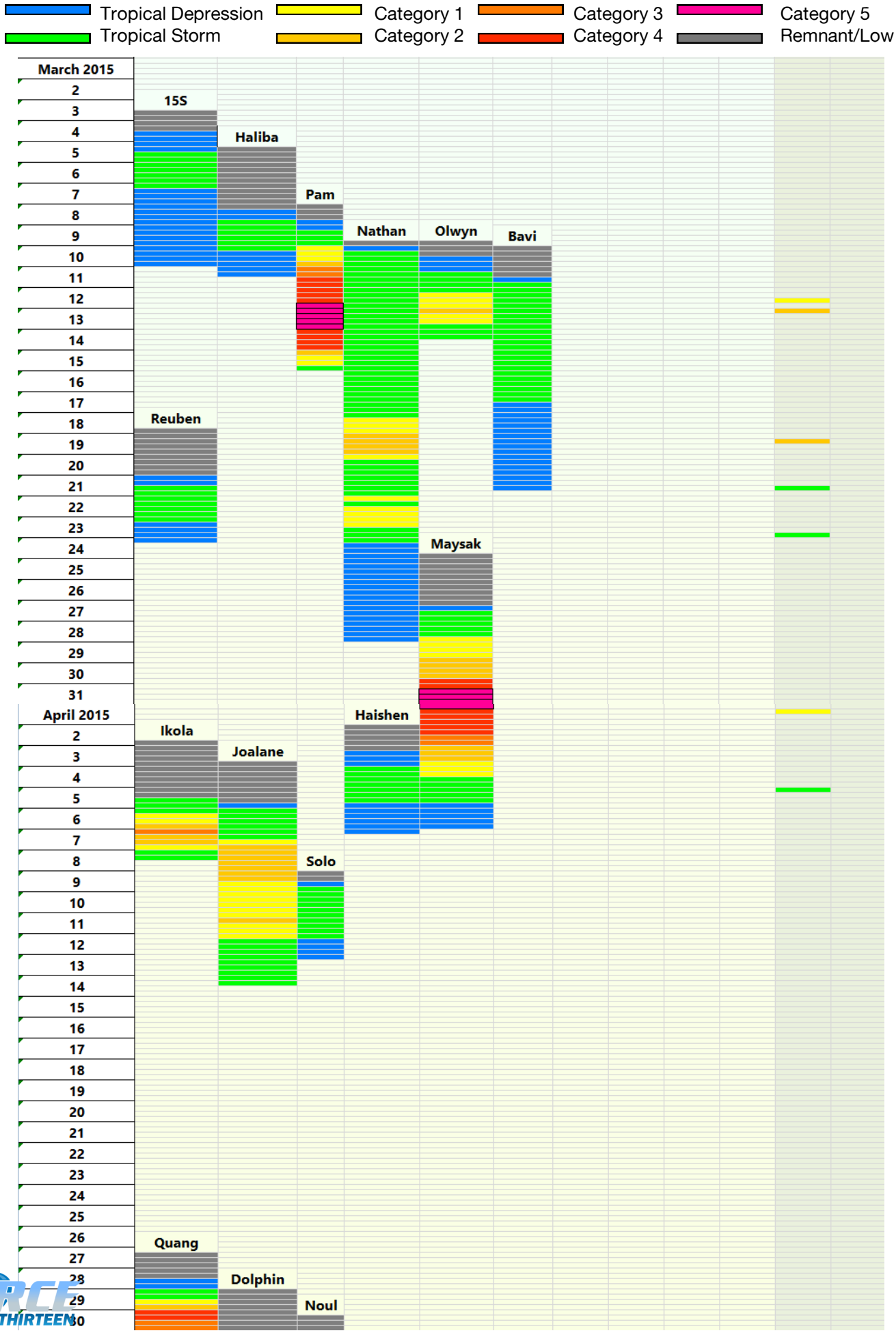
Image: Force Thirteen enhanced visible image of Typhoon Melor shortly before landfall in Samar on December 14, 2015. Hundreds of thousands were evacuated in the Bicol Region of the Philippines.
NOAA Floaters

2.7. 2015 Storm Timeline

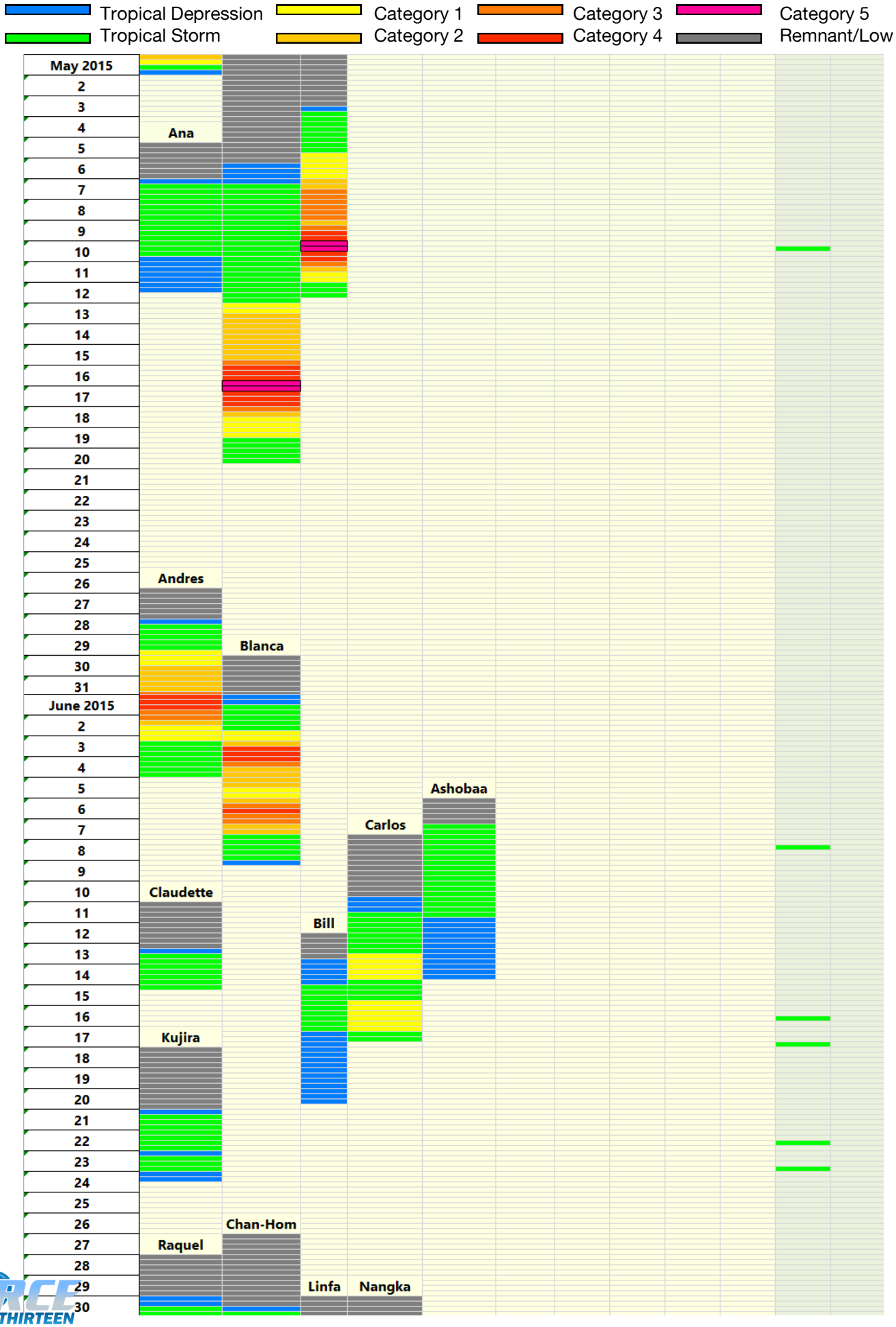
Below shows the progression at six-hourly intervals of worldwide tropical cyclone activity in 2015.
All intensity categories are in correspondence with the Saffir-Simpson Hurricane Wind Scale.



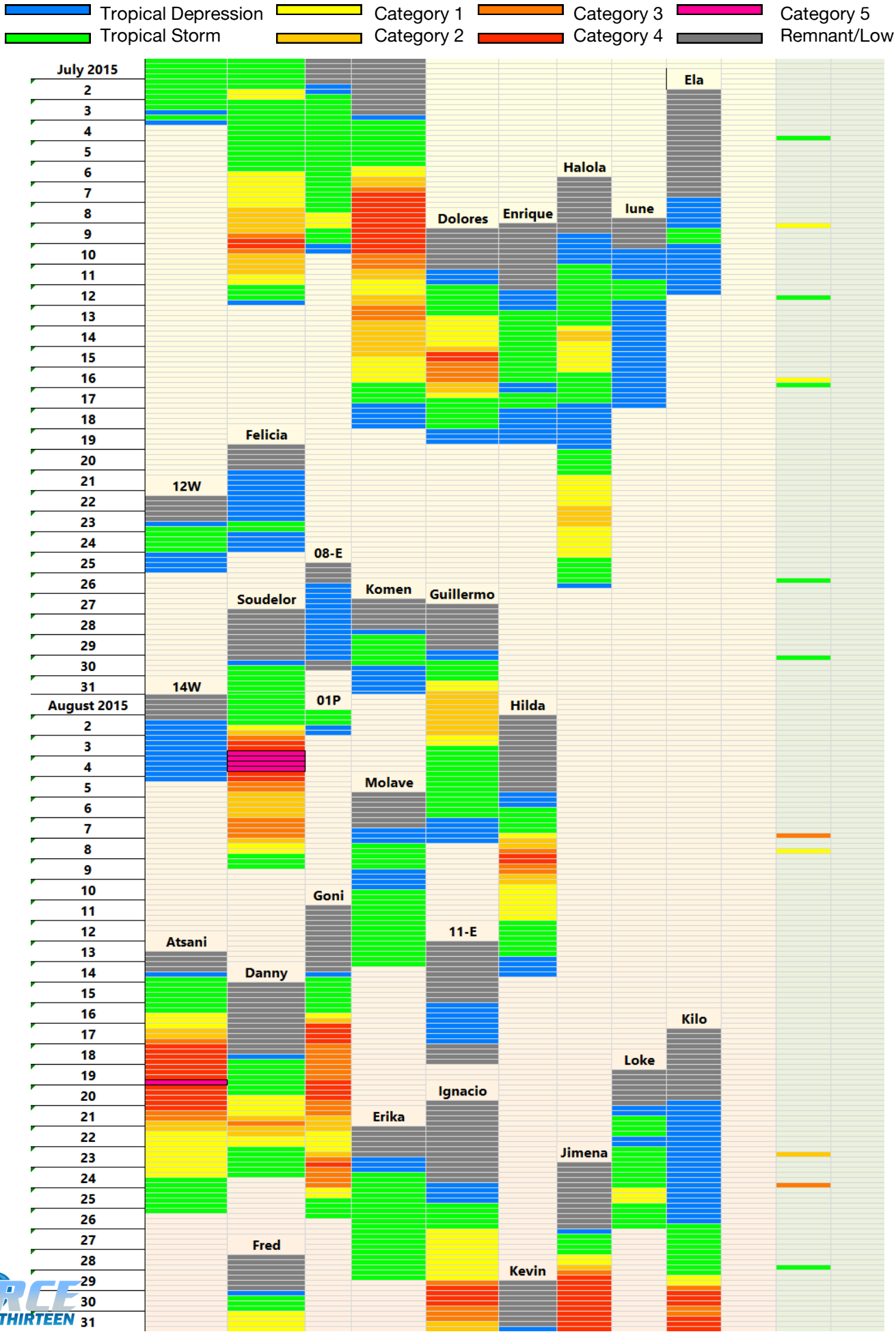
2015 Storm Timeline



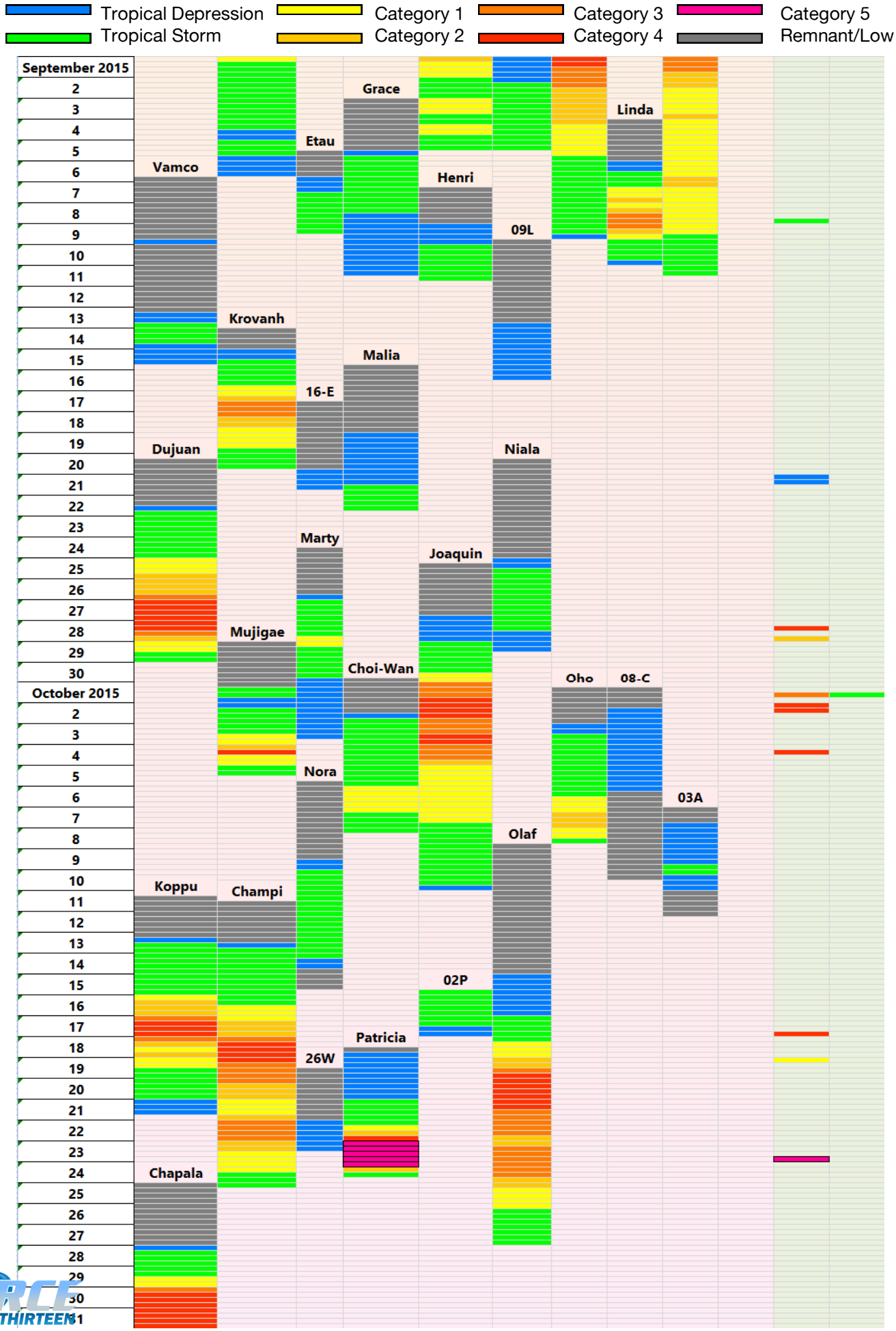
2015 Storm Timeline



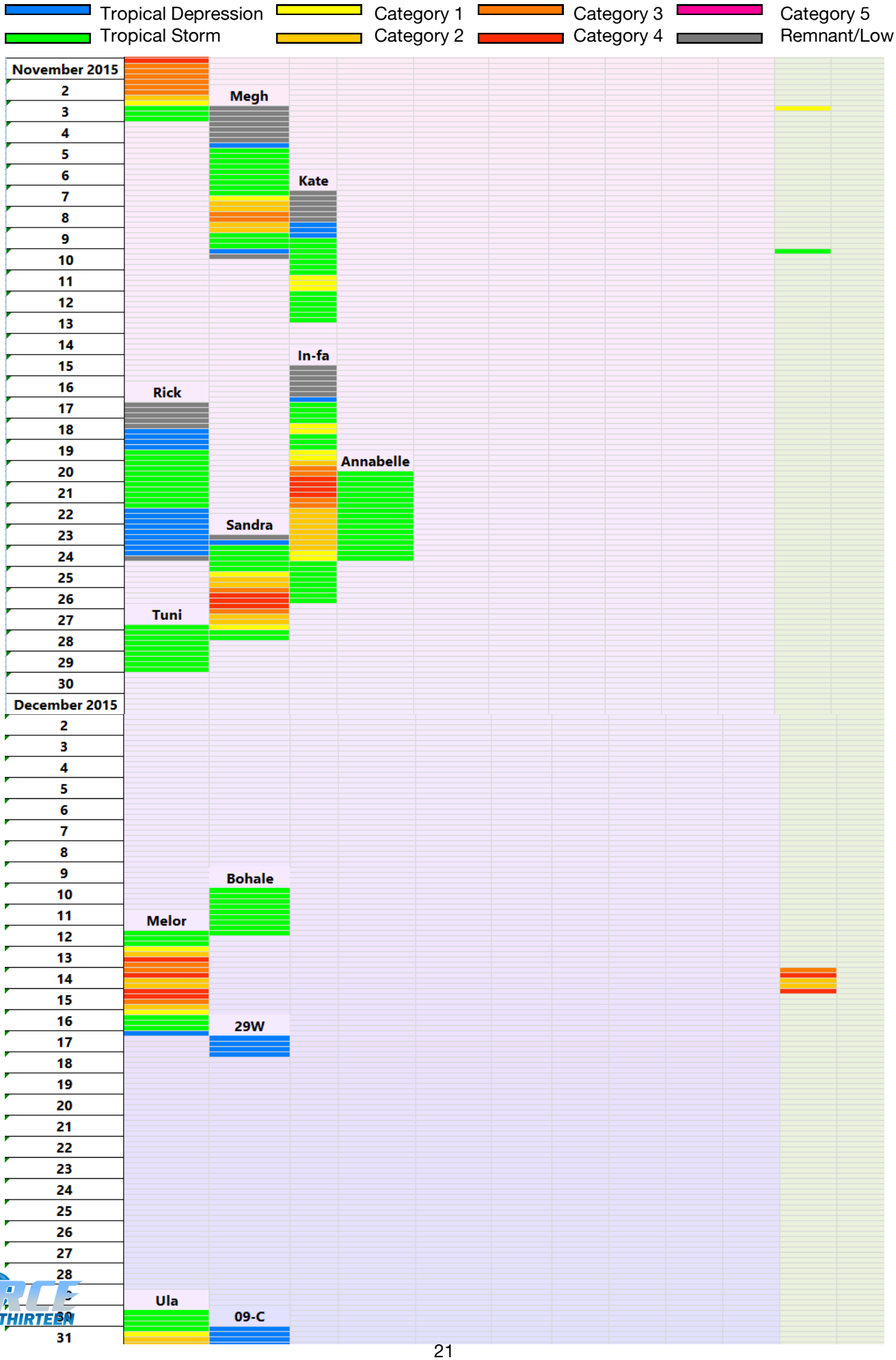
2015 Storm Timeline



2015 Storm Timeline



2015 Storm Timeline



3. 2015 Records

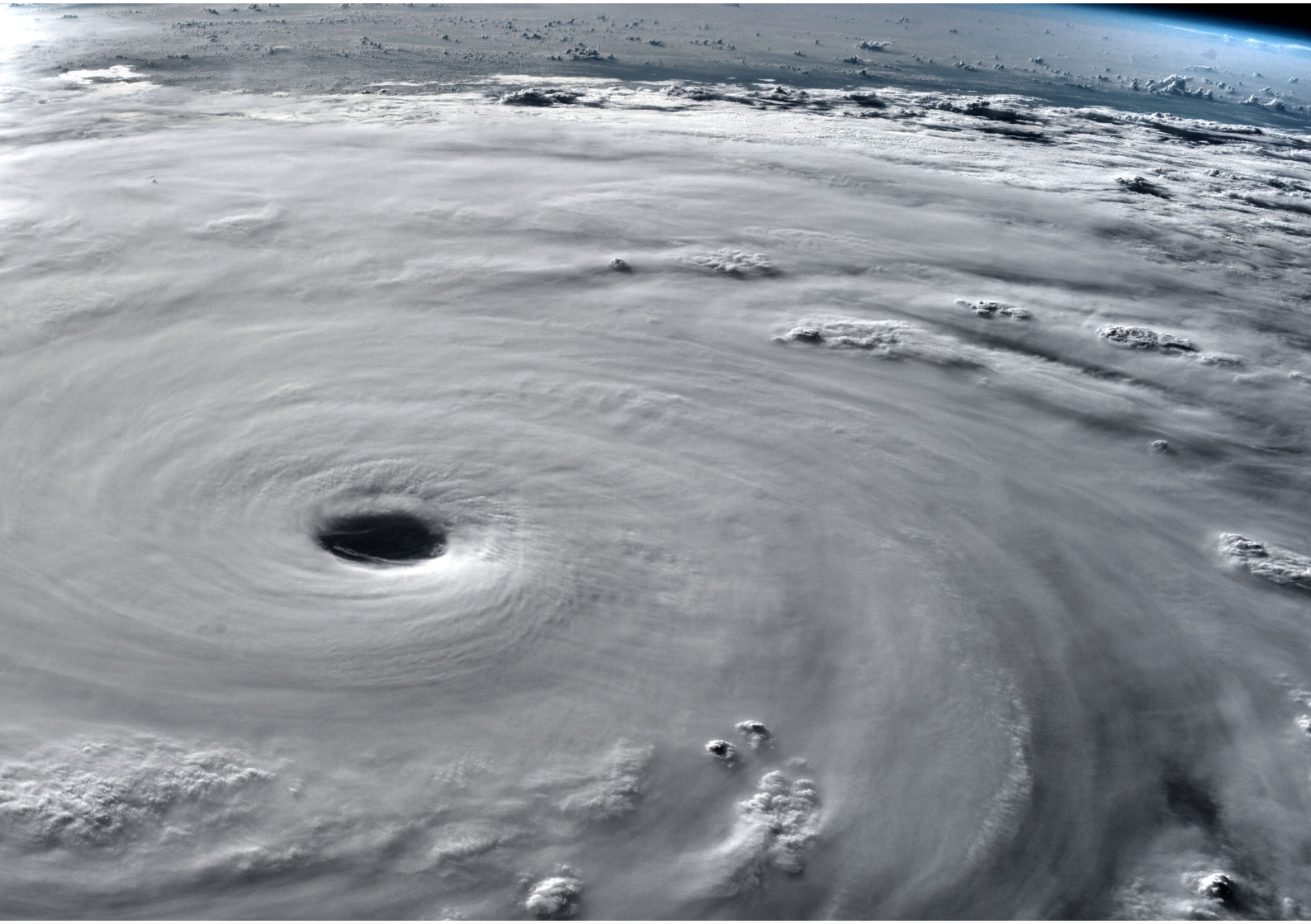


Image: Force Thirteen enhanced image of Typhoon Soudelor near peak intensity, captured by the International Space Station in August 2015

Intensity and Longevity Records

The next page will show all the records set in 2015 for intensity and longevity. In the records section of this report, all storms that set their record in 2015 will be counted as part of this year's records, even if they formed or dissipated in a different calendar year. If a storm's record encompasses multiple years (as could be seen in longevity records, for instance), the record will be counted towards both years.

3.1. Intensity and Longevity Records

Most intense central pressures

World

1. Hurricane Patricia	879mb
2. Cyclone Pam	896mb
3. Cyclone Eunice	900mb
=. Typhoon Soudelor	900mb

Atlantic

1. Hurricane Joaquin	931mb
2. Hurricane Danny	974mb
3. Hurricane Kate	983mb

Eastern Pacific (includes Central)

1. Hurricane Patricia	879mb
2. Hurricane Sandra	935mb
3. Hurricane Jimena	936mb

Western Pacific

1. Typhoon Soudelor	900mb
2. Typhoon Maysak	910mb
3. Typhoon Noul	920mb

North Indian Ocean

1. Cyclone Chapala	940mb
2. Cyclone Megh	964mb
3. Cyclone Komen	986mb

South Indian Ocean

1. Cyclone Eunice	900mb
2. Cyclone Bansi	923mb
3. Cyclone Quang	945mb

South Pacific Ocean

1. Cyclone Pam	896mb
2. Cyclone Marcia	930mb
3. Cyclone Lam	943mb

Strongest Wind Speeds

World

1. Hurricane Patricia	200mph
2. Typhoon Soudelor	180mph
3. Cyclone Pam	165mph

Atlantic

1. Hurricane Joaquin	155mph
2. Hurricane Danny	115mph
3. Hurricane Fred	85mph

Eastern Pacific (includes Central)

1. Hurricane Patricia	200mph
2. Hurricane Jimena	150mph
3. Hurricane Olaf	150mph

Western Pacific

1. Typhoon Soudelor	180mph
=. Typhoon Maysak	160mph
=. Typhoon Noul	160mph

North Indian Ocean

1. Cyclone Chapala	145mph
2. Cyclone Megh	120mph
3. Cyclone Ashobaa	60mph

South Indian Ocean

1. Cyclone Eunice	160mph
2. Cyclone Bansi	160mph
3. Cyclone Quang	140mph

South Pacific Ocean

1. Cyclone Pam	165mph
2. Cyclone Marcia	130mph
3. Cyclone Lam	115mph

Most intense Category 4 storms

World

1. Typhoon Nangka	925mb
=. Typhoon Dolphin[3]	925mb
=. Typhoon Koppu	925mb

Strongest 24 hour average wind

World

1. Hurricane Patricia[4]	193.8mph
2. Typhoon Soudelor	170.0mph
3. Cyclone Pam	162.5mph

Most intense Category 3 storms

World

1. Hurricane Linda	950mb

Most Intense 24 hour average air pressure

World

1. Hurricane Patricia	887.8mb
2. Cyclone Pam	907.0mb
3. Typhoon Soudelor	909.0mb

[3] The Japanese Meteorological Agency is the responsible agency for tracking typhoons, the intensities shown are from their observations. However, there is disagreement with some observations made by the Joint Typhoon Warning Center, and indeed by Force Thirteen, notably with the storms referenced here.

[4] Whilst full research is yet to be carried out as of December 24, 2015, Hurricane Patricia is believed to have the third highest 24 hour average wind value ever recorded, behind Typhoons Nancy (1961) and Ida (1958)

Intensity and Longevity Records (continued)

Longest duration as a tropical storm or stronger

World

1. Hurricane/Typhoon Kilo	378 hours
2. Typhoon Nangka	330 hours
3. Hurricane Jimena	318 hours
=. Cyclone Nathan	318 hours

Atlantic

1. Hurricane Joaquin	216 hours
2. Hurricane Danny	138 hours
=. Hurricane Fred	138 hours

Eastern Pacific (includes Central)

1. Hurricane/Typhoon Kilo	378 hours
2. Hurricane Jimena	318 hours
3. Hurricane Ignacio	246 hours

Western Pacific

1. Typhoon Nangka	330 hours
2. Typhoon Chan-Hom	288 hours
3. Typhoon Dolphin	270 hours

North Indian Ocean

1. Cyclone Chapala	162 hours
2. Cyclone Megh	114 hours
3. Cyclone Ashobaa	108 hours

South Indian Ocean

1. Cyclone Bansi	174 hours
2. Cyclone Joalane	144 hours
3. Cyclone Eunice	126 hours

South Pacific Ocean

1. Cyclone Nathan	318 hours
2. Cyclone Pam	150 hours
3. Cyclone Niko	102 hours

Longest duration as a Category 5 storm

World

1. Hurricane Patricia	30 hours
2. Typhoon Soudelor	24 hours
=. Typhoon Maysak	24 hours
=. Cyclone Pam	24 hours

Atlantic

None

Eastern Pacific (includes Central)

1. Hurricane Patricia	30 hours

Western Pacific

1. Typhoon Soudelor	24 hours
=. Typhoon Maysak	24 hours
3. Typhoon Noul	12 hours

North Indian Ocean

None

South Indian Ocean

1. Cyclone Bansi	12 hours
=. Cyclone Eunice	12 hours

South Pacific Ocean

1. Cyclone Pam	24 hours

Longest duration at sub-900mb

World

1. Hurricane Patricia	18 hours
2. Cyclone Pam	12 hours

Longest duration at Category 4 or stronger

World

1. Typhoon Atsani	78 hours
=. Cyclone Pam	78 hours
3. Typhoon Nangka	72 hours

Longest duration at sub-920mb

World

1. Hurricane Patricia	24 hours
=. Typhoon Soudelor	24 hours
=. Typhoon Maysak	24 hours

Longest duration at Category 1 or stronger

World

1. Typhoon Nangka	258 hours
2. Hurricane/Typhoon Kilo	234 hours
3. Typhoon Goni	216 hours

Longest duration at Category 4 without strengthening

World

1. Hurricane Jimena	78 hours
2. Typhoon Nangka	72 hours
3. Cyclone Chapala	48 hours

Longest duration at Category 3 without strengthening

World

1. Hurricane Linda	18 hours
2. Typhoon Krovanh	12 hours
=. Cyclone Megh	12 hours

Longest duration at Category 2 without strengthening

World

1. Hurricane Guillermo	48 hours
2. Hurricane Oho	18 hours
=. Cyclone Joalane	18 hours

Longest duration at Category 1 without strengthening

World

1. Hurricane Carlos	36 hours
2. Hurricane Loke	30 hours
3. Cyclone Ola	24 hours

Intensity and Longevity Records (continued)

Longest duration at Tropical Storm w/o strengthening

World

1. Tropical Storm Ida	132 hours
2. Tropical Storm Bavi	120 hours
3. Tropical Storm Ashobaa	108 hours

Shortest Duration

World

1. Cyclone 03A	12 hours
=. Tropical Storm Felicia	12 hours
=. Cyclone 01P	12 hours

Coldest Cloud Tops

World

1. Cyclone Pam	-89.5°C (-129°F)
2. Cyclone Bansi	-86.4°C (-124°F)
3. Typhoon Mujigae	-86.2°C (-124°F)
4. Hurricane Patricia	-86.1°C (-123°F)
5. Cyclone Eunice	-86.1°C (-123°F)

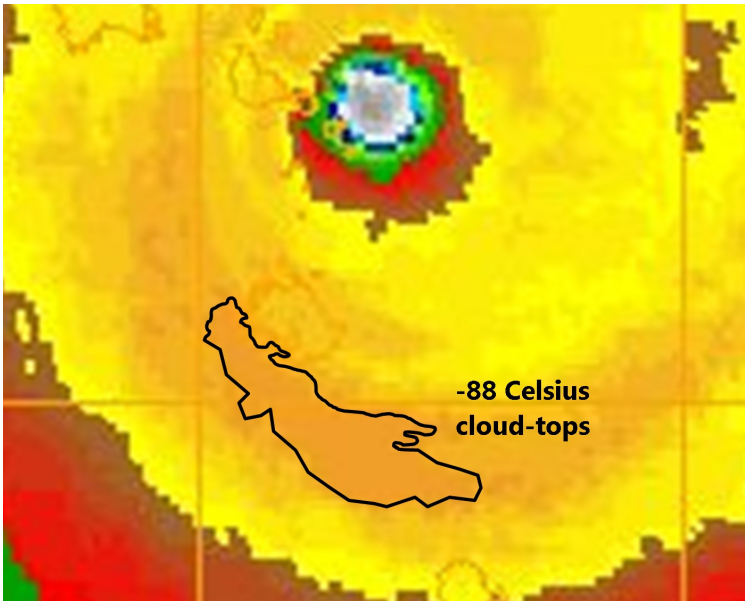


Image: Annotated infrared image of Cyclone Pam whilst it was displaying cloud tops of –88 Celsius or below. Colder cloud tops indicate thunderstorm activity extending to higher elevations of the atmosphere, and is a significant indicator of how intense an individual thunderstorm is (for storms weaker than Category 3), or an indicator of how strong the whole cyclone is (for storms stronger than Category 3).
U.S. Navy

3.2. Activity Records

Most tropical storms or stronger active simultaneously

World

1. Five, on July 12
=. Five, on August 26

Atlantic

1. Two, on September 5-6

Eastern Pacific (includes Central)

1. Four, on July 13
=. Four, on August 26

Western Pacific

1. Two, on multiple occasions

North Indian Ocean

1. One, on multiple occasions

South Indian Ocean

1. Two, on multiple occasions

South Pacific Ocean

1. Two, on multiple occasions

Most Tropical Storms or stronger active in a 30-day period

World

1. Eighteen, from August 24-September 23
2. Fifteen, from July 3-August 2
=. Fifteen, from August 13-September 12

Atlantic

1. Seven, from August 24-September 23
=. Seven, from August 29-September 28
3. Six, from September 6-October 6

Eastern Pacific (includes Central)

1. Eight, from July 8-August 7
=. Eight, from August 25-September 24
3. Seven, from August 7-September 6

Western Pacific

1. Eight, from July 9-August 8
=. Eight, from September 13-October 13
3. Seven, from August 25-September 24

North Indian Ocean

1. Three, from October 11-November 10

South Indian Ocean

1. Seven, from March 7-April 6
2. Five, from January 18-February 27
=. Five, from February 8-March 10

South Pacific Ocean

1. Four, from February 19-March 21
=. Four, from March 15-April 14

Most hurricanes active simultaneously

World

1. Four, on August 31
2. Three, on multiple occasions

Most hurricanes active in a 30-day period

World

1. Eleven, from August 3-September 2

Most Category 3 storms active simultaneously

World

1. Three, on August 30
2. Two, on multiple occasions

Most Category 3s active in 30-day period

World

1. Seven, from August 7-September 6
=. Seven, from September 28-October 28

Most Category 4 storms active simultaneously

World

1. Three, on August 30
2. Two, on multiple occasions

Most Category 4s active in 30-day period

World

1. Seven, from September 28-October 28
2. Five, from August 21-September 20

Most consecutive days with a tropical storm active

World

1. Fifty-two, from September 12-November 3
2. Forty-five, from July 29-September 11
3. Twenty-one, from May 28-June 17

Most consecutive days with two tropical storms active

World

1. Forty-four, from July 30-September 11
2. Eighteen, from June 30-July 17
3. Sixteen, from September 25-October 10

Activity Records (continued)

Most consecutive days with a hurricane active **World** 1. Fourteen, from September 25-October 8 =. Fourteen, from August 27-September 9	Most consecutive days with two hurricanes active **World** 1. Ten, from August 16-25 2. Nine, from August 28-September 5 =. Nine, from October 16-24
Most consecutive days with a major hurricane active **World** 1. Eight, from October 17-24 2. Six, from January 12-17	Most consecutive days with two major hurricanes active **World** 1. Five, from August 17-21 2. Four, from August 28-September 1

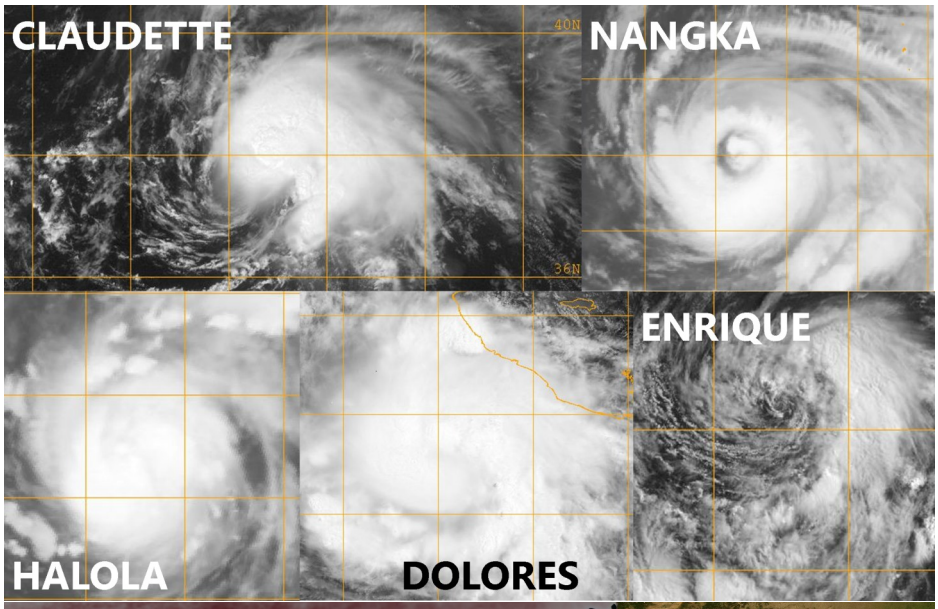


Image: Force Thirteen collage of Tropical Storm Claudette in the Atlantic, Hurricane Dolores and Tropical Storm Enrique in the Eastern Pacific, and Typhoons Halola and Nangka in the Western Pacific. These storms all co-existed on July 12, 2015 U.S. Navy

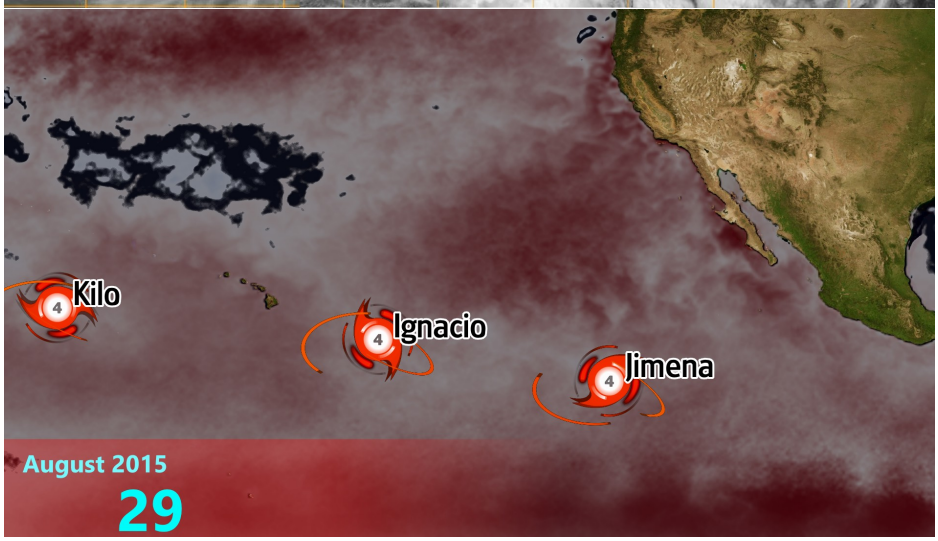


Image: Snapshot of Force Thirteen's 2015 Pacific Hurricane Season animation, showing Kilo, Ignacio and Jimena all attaining Category 4 intensity at the same time on August 29, 2015.

3.3. Landfall Records

Strongest landfalls

World

1. Hurricane Patricia	165mph
2. Typhoon Koppu	150mph
3. Typhoon Melor	145mph
4. Hurricane Joaquin	130mph
=. Typhoon Mujigae	130mph

Most landfalls

World

1. Typhoon Melor	5
2. Hurricane Joaquin	3
=. Typhoon Mekkhala	3
=. Typhoon Soudelor	3

Most hurricane landfalls

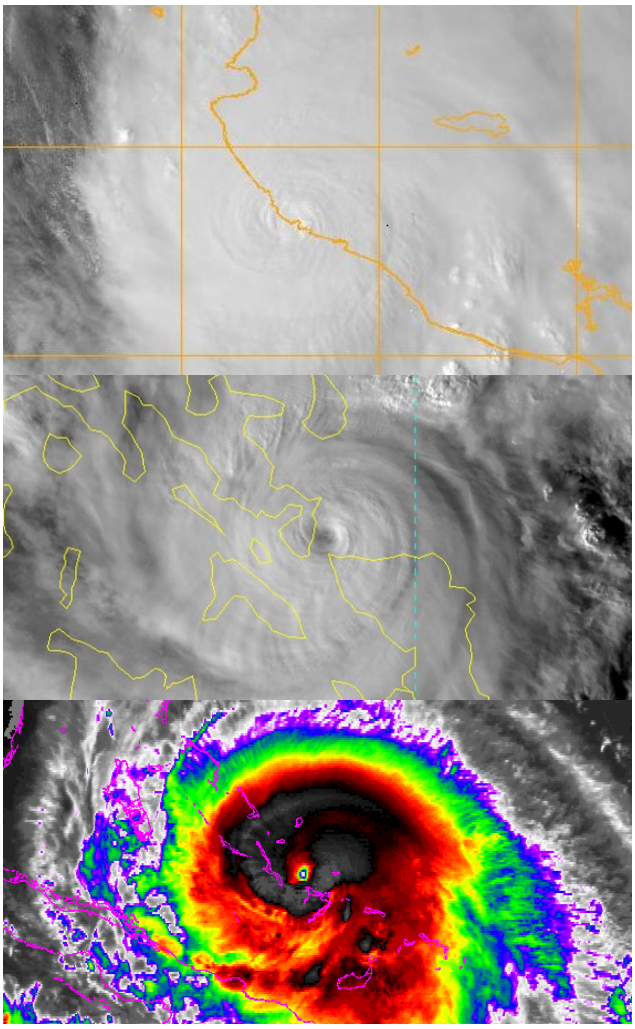
World

1. Typhoon Melor	5
2. Hurricane Joaquin	3
=. Typhoon Soudelor	3

Most major hurricane landfalls

World

1. Typhoon Melor	4
2. Hurricane Joaquin	3
3. Typhoon Dujuan	1



Landfall totals for 2015

Tropical Depressions	2	(51)
Tropical Storms	21	(49)
Category 1	9	(28)
Category 2	6	(19)
Category 3	5	(13)
Category 4	7	(8)
Category 5	1	(1)

Storm-landfall intensity ratios

Tropical Depressions	50%
Tropical Storms	53%
Category 1	52%
Category 2	41%
Category 3	34%
Category 4	25%
Category 5	11%

Images from top to bottom:
1. Visible image of Hurricane Patricia making landfall in Mexico at 22:30 UTC on October 23, 2015, with winds estimated to be around 165mph
2. Visible image of Typhoon Melor shortly before its second landfall in the Philippines around 08:00 UTC on December 14, 2015
3. GOES floater infra-red imagery of Hurricane Joaquin at 20:15 UTC on October 1, 2015.

3.4. 3.5. Eye and Size Records

Largest Eyes

World

1. Hurricane Blanca	90nm
2. Typhoon Champi	60nm
3. Typhoon Atsani	54nm

Smallest Eyes

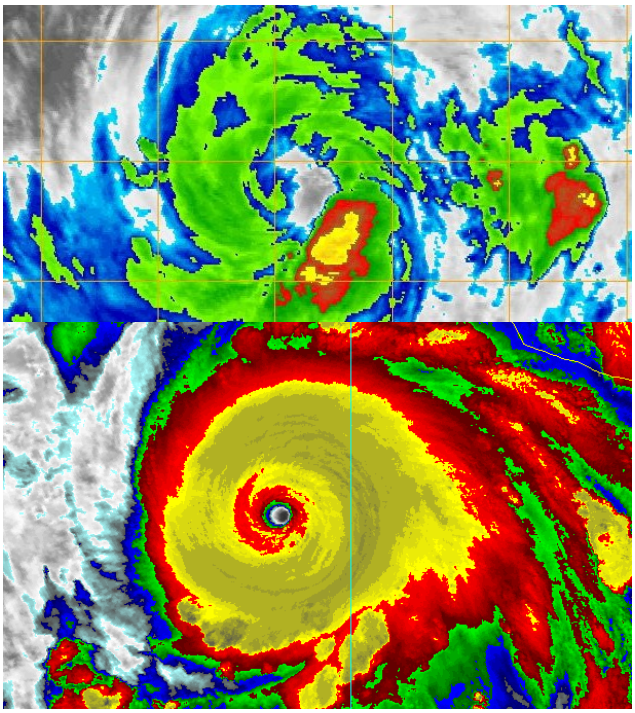
World

1. Hurricane Patricia	4nm
2. Typhoon Soudelor	5nm
3. Hurricane Danny	5nm

Warmest Eyes

World

1. Typhoon Soudelor	19.9°C (67.8°F)
2. Typhoon Dujuan	19.8°C (67.6°F)
3. Typhoon Maysak	19.1°C (66.4°F)



Images from top to bottom:
1. Infra-red image of Hurricane Blanca gradually weakening from its first peak at a time when it exhibited its greatest diameter eye of approximately 90 nautical miles. The image was taken around 02:15 UTC on June 5, 2015. U.S. Navy
2. Enhanced Infra-red image of Hurricane Patricia exhibiting its very small eye of approximately 4 nautical miles at around 15:29 UTC on October 23, 2015. Patricia maintained a similar sized eye for the best part of 24 hours during October 23 until the eyewall began to collapse shortly before landfall.

Largest Storm Size

World

1. Hurricane Kate	320nm
=. Cyclone Bansi	320nm
3. Typhoon Chan-Hom	315nm
=. Cyclone Pam	315nm
=. Typhoon Soudelor	315nm

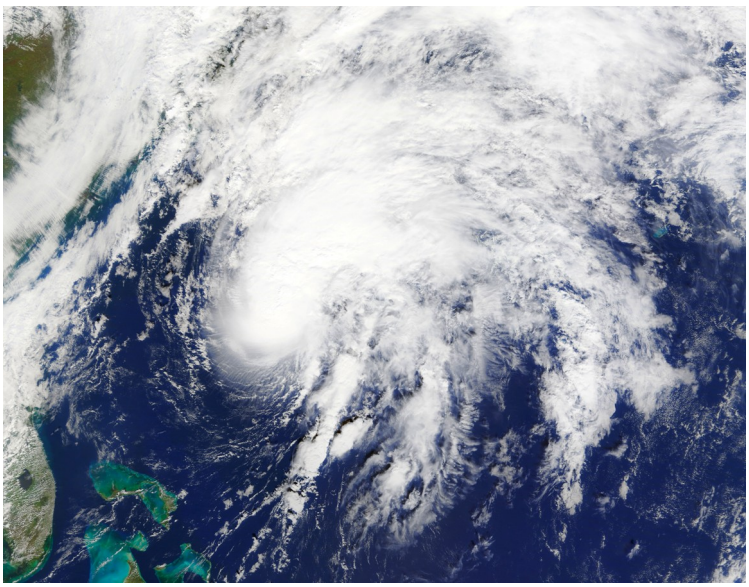


Image: Force Thirteen Enhanced visible image of Hurricane Kate near peak intensity. Its wind field was the joint largest worldwide in 2015, with Bansi. Tropical Storm force winds extended out up to 320 nautical miles.
MODIS

3.6. Intensification Records

Fastest over a 12 hour period

World

1. Hurricane Patricia	+70mph
2. Typhoon Soudelor	+60mph
3. Typhoon Goni	+55mph

Fastest over a 24 hour period

World

1. Hurricane Patricia	+120mph
2. Cyclone Bansi	+75mph
3. Typhoon Goni	+65mph
=. Hurricane Blanca	+65mph
=. Hurricane Sandra	+65mph

Fastest time to increase wind speeds by 100mph

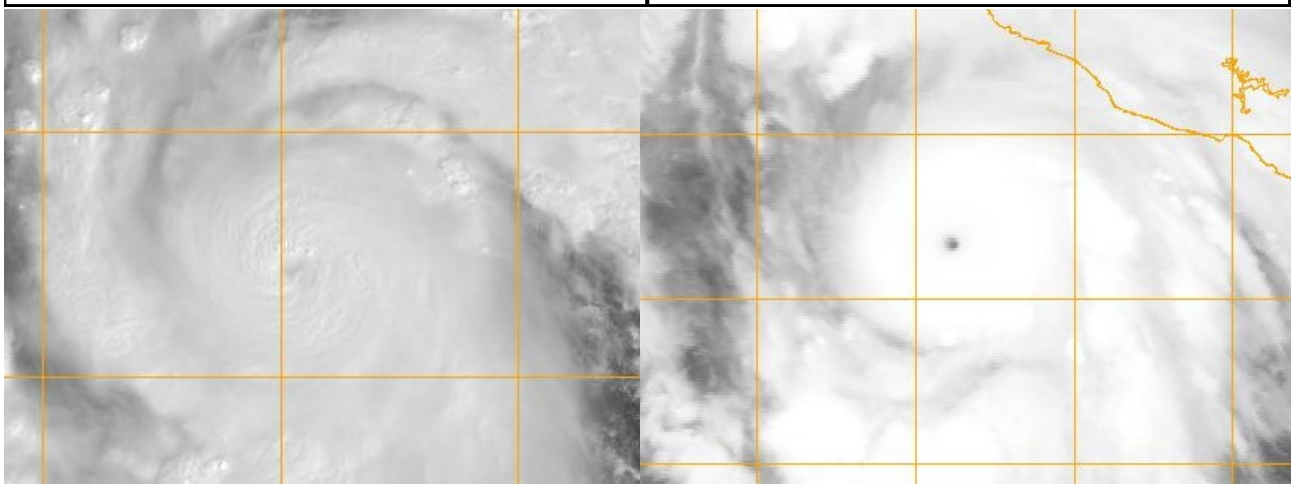
World

1. Hurricane Patricia	15 hours
2. Typhoon Soudelor	36 hours
=. Cyclone Bansi	36 hours

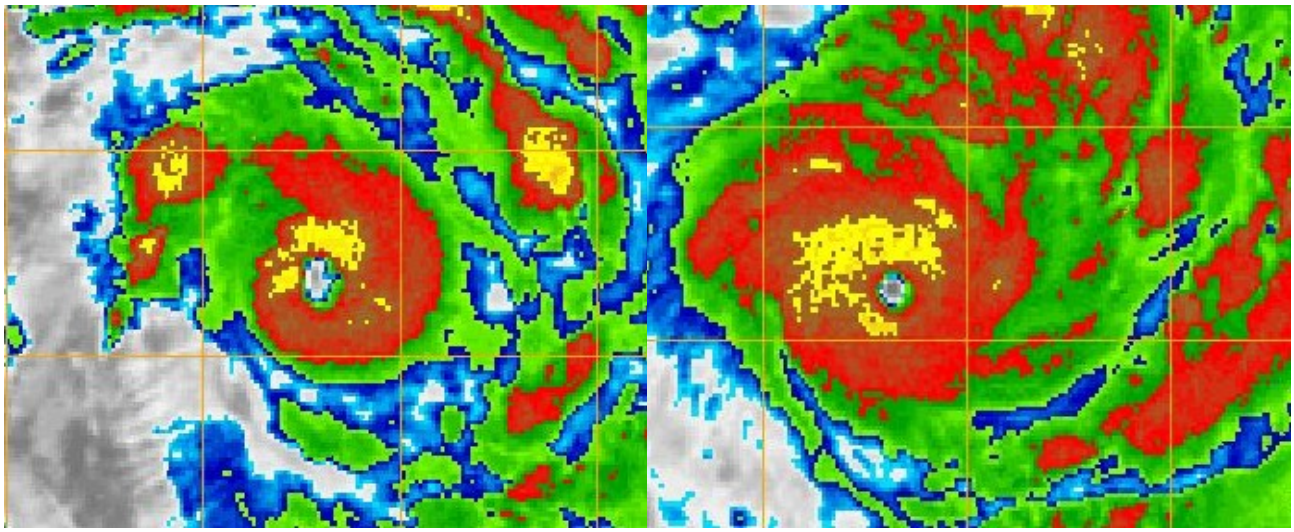
Fastest time to decrease pressure by 100mb

World

1. Hurricane Patricia	24 hours



Above: Comparison images of Hurricane Patricia. The left photo was taken on October 22, 2015 at 16:00 UTC, when Patricia had winds of 90mph. The right photo was taken on October 23, 2015 at 07:15 UTC, when Patricia had winds of 200mph. This shows a 110mph difference in fifteen hours.



Above: Comparison images of Cyclone Bansi. The left photo was taken at 01:30 UTC on January 12, 2015, when Bansi had winds of 75mph. The right photo was taken at 01:00 UTC on January 13, 2015, when Bansi had winds of 160mph. This shows a 75mph difference in less than 24 hours.

3.7. Damages

Costliest storms (USD)

World

1. Typhoon Mujigae	$3,690,000,000
2. Typhoon Soudelor	$3,200,000,000
3. Typhoon Chan-hom	$1,460,000,000

Atlantic

1. Tropical Storm Erika	$511,700,000
2. Hurricane Joaquin	$60,000,000
3. Tropical Storm Bill	$17,900,000

Eastern Pacific (includes Central)

1. Hurricane Patricia	$407,400,000
2. Tropical Depression 16	$17,700,000
3. Hurricane Carlos	$1,100,000

Western Pacific

1. Typhoon Mujigae	$3,690,000,000
2. Typhoon Soudelor	$3,200,000,000
3. Typhoon Chan-hom	$1,460,000,000

North Indian Ocean

None

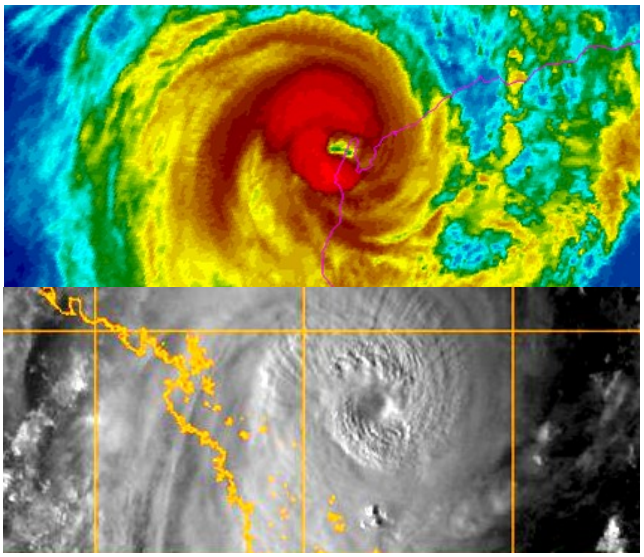
South Indian Ocean

1. Cyclone Olwyn	$76,000,000
2. Cyclone Lam	$64,000,000
3. Cyclone Chedza	$40,000,000

South Pacific Ocean

1. Cyclone Marcia	$591,000,000
2. Cyclone Pam	$360,000,000

Images from top to bottom:
1. Infra-red image of Cyclone Olwyn making its first landfall in Western Australia on March 12, 2015. Olwyn was the second costliest storm in Australia this year.
2. Last visible image of Cyclone Marcia on February 19, 2015. This was just before Marcia peaked as a Category 4 storm and became the costliest Australian storm of 2015.



Buildings Damaged

World

1. Typhoon Melor	181,115
2. Cyclone Komen	55,899
3. Cyclone Chedza	48,000

Most landslides

World

1. Tropical Storm Erika	3
2. Tropical Storm Etau	2
3. Cyclone Komen	1

Buildings Destroyed

World

1. Cyclone Komen	272,488
2. Typhoon Melor	98,371
3. Typhoon Soudelor	7,618

Most tornadoes

World

1. Tropical Storm Bill	8
2. Multiple storms	1 each

Most fatalities

World

1. Cyclone Komen	170
2. Cyclone Chedza	80
3. Typhoon Koppu	58

Largest storm surge

World

1. Cyclone Chapala	30 feet
2. Cyclone Pam	16 feet
3. Typhoon Chan-Hom	6 feet

Most injuries

World

1. Typhoon Soudelor	430
2. Cyclone Chapala	40
3. Typhoon Melor	24

Largest rainfall totals

World

1. Cyclone Komen	1,081mm
2. Typhoon Soudelor	806mm
3. Typhoon Nangka	740mm

4. Force Thirteen during 2015

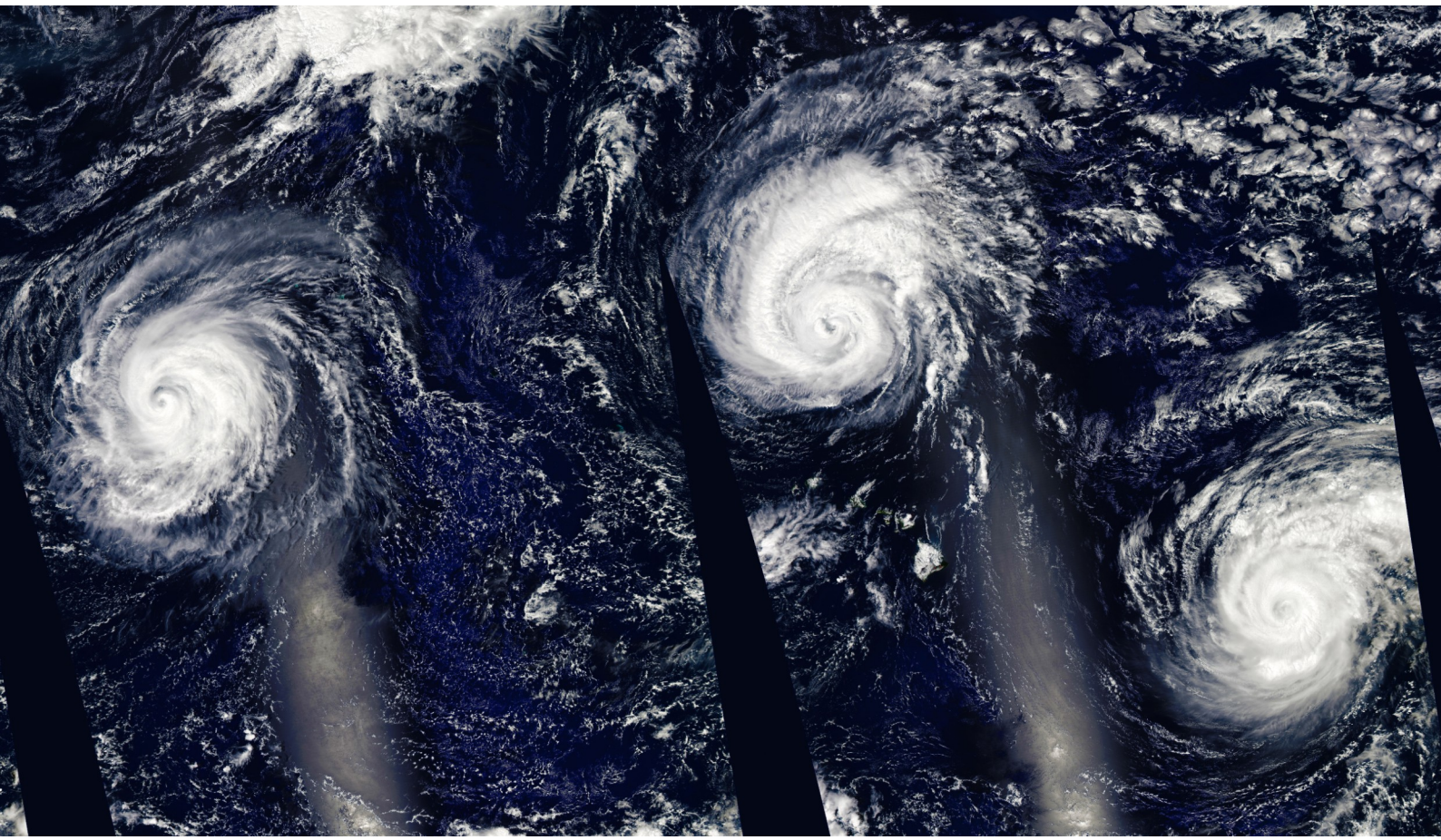


Image: Hurricanes Kilo (left), Ignacio (center), and Jimena (right) co-existing in late August 2015 in the Pacific Ocean. Jimena would ultimately be the strongest storm of the three.

A very successful year for the project

2015 will be regarded as the breakthrough year for many aspects of Force Thirteen, most notably the most successful new features which were the Live Events, our Live Streaming Service, and the formation of the Force Thirteen Team. Many other concepts were and in some cases, still are being worked with, and their potential is yet to be realised.

As a broadcaster, our reach is important, though we never go out of our way to attain peak numbers at the expense of quality broadcasting. In any case, 2015 sets a new record for amount of views on the Force Thirteen YouTube channel. The website was mainly absent for the year, and consistent results are expected here too in 2016.

Viewer and user feedback has been generally very positive.

All of these aspects, and a critique of our actual coverage, will be covered in further detail in this section of the report.

4.1 Forecasting Critique and Storm Coverage

In total, there were 374 videos uploaded on the Force Thirteen main channel throughout 2015. There were also 27 video updates on Force Thirteen Xtra, 7 on Force Thirteen UK & Ireland, 3 on Force Thirteen Australia, and 4 on Space Thirteen.

Most storms were covered satisfactorily, especially later on in the year when coverage became more complete. Earlier in the year, the Force Thirteen team had less numbers and was unable to consistently deliver on storm videos. However, the social pages on Facebook and Twitter were usually up to date. More recently, the Force Thirteen website and tracking page has been automated and is updated around the clock.

In August 2015, F13 HQ took a scheduled vacation and rough plans were set for other people to update the public on storms if necessary. Unfortunately, there were technical issues with this and it did not come to fruition with the existence of Typhoon Soudelor.
However, these problems were rectified and in late October 2015, when F13 HQ took another scheduled vacation, the rest of the team were able to provide backup very effectively during the landfall of Hurricane Patricia.

The most impressive part of the year was during Force Thirteen's streaming service, when the team broadcasted for 22 consecutive hours as Typhoon Melor made its landfalls in the Philippines. This was received very well by the public, and we plan to do this whenever a major storm is active.

Force Thirteen's targets remain well defined. Our primary targets consist of these:
- To provide social media and website updates about every storm on a regular basis
- To provide at least 12 hourly video updates during a significant landfall event (Category 1+)
- To provide at least 6 hourly, but preferably live streaming video updates during critical landfall events (Category 3+)
- To respond to concerned members of the public with their queries on all mediums that we have a platform on. These are via direct e-mail, the Force Thirteen website, Facebook, Twitter, YouTube, Soundcloud, WhatsApp, QQ Messenger, WeChat, and face to face interaction.
- To create annual animations of the season passed, in all world basins except the South Atlantic.

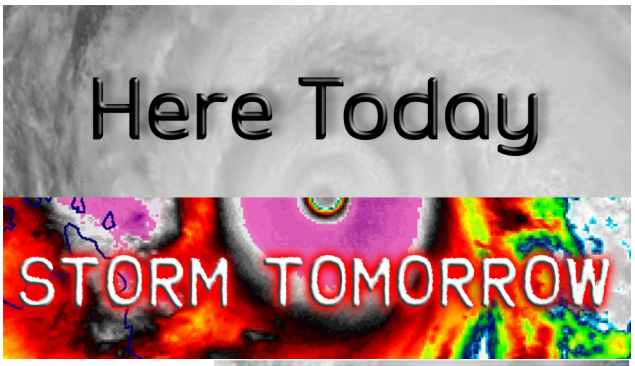
Force Thirteen's targets and priorities do NOT include the following:
- Hypothetical Hurricane Seasons
- Past season animations
- South Atlantic animations
- What might have been animations
- Anything else not covered in the targets

Public opinion, to our knowledge, has been very positive. Any issues usually get dealt with promptly, where possible.

Our storm coverage could be improved by the following:
- Improved graphics during updates
- Backup for Jason with website programming and design, as well as on the streaming page
- More natural and experienced presenters

4.2 New Features in our coverage during 2015

Force Thirteen launched many projects of its own during 2015, some of them addressing current storm activity, others that were supplementary or unrelated to storm tracking.
This became possible with the invention of the Force Thirteen Team in early January 2015.



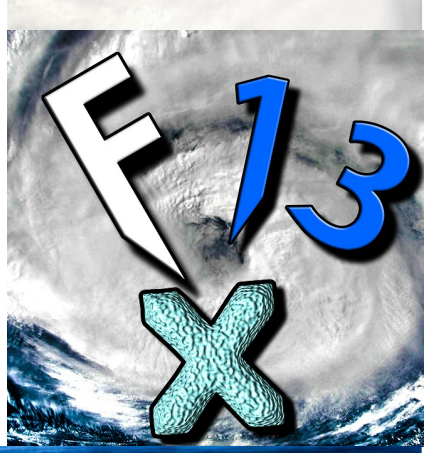
The first feature was Here Today Storm Tomorrow, which was essentially an alternate version of the Tropical Weather Bulletins of 2013-14. This project, however, became obsolete in February 2015 and lost favour internally.

In February, the first ever live broadcast was done on the channel, and from here on in, many storms had live broadcasts in which viewers could interact. Initially we used Google Hangouts, but then used our own broadcasting software starting in summer.

Sound Thirteen also became more prominent, where Force Thirteen hosts some of its music.

Force Thirteen Xtra launched on March 1, 2015, and remains the place in which Team members can upload their own videos or live events. This is particularly useful when there is a conflict of interest or lack of key members.

Due to popular demand, Force Thirteen also launched its Australian branch in November.



Force Thirteen has a wide variety of operations, which can be seen at the following webpage:
http://www.force-13.com/operations.html

4.3 Viewing Statistics

2015 had approximately 611,672 views on the channel during the year. This figure may be inaccurate by up to 1,000 each way.
By comparison, 2014 finished with 555,849 views, helped significantly by Typhoon Hagupit which contributed at least one third of these views. The most impressive aspect of 2015 is that views were more evenly distributed throughout the year.
Most notably, between January 1 and June 10, 2014, there were only three days in which there were more than 1,000 views. For the same period in 2015, this occurred on 45 days.
Despite the overall views, the most viewed day on the channel was on December 6, 2014, when there were 60,169. The most viewed day of 2015 was October 23, when there were 57,997 views.

2015 set a new record for most days in a row with over 1,000 views—30—from August 16-September 14.

In terms of watch time (amount of minutes viewers spent viewing the videos), 2015 also comes out on top, with at least 1,499,886 minutes of viewing time, collectively. In 2014, this number was only 1,262,418, and 913,141 in 2013.

In 2015, approval rate also reached a new record, with 3372 likes compared to 2245 last year. Typically, as videos enter a more mainstream focus, the disapproval rate has also been the highest on record this year, with 247 dislikes compared to 82 last year.

In 2015, comments on YouTube videos amounted to 16,311, compared to 1,213 in 2014. This is mainly due to the commencement of live events, leading to more instantaneous interaction between viewers and with the team.

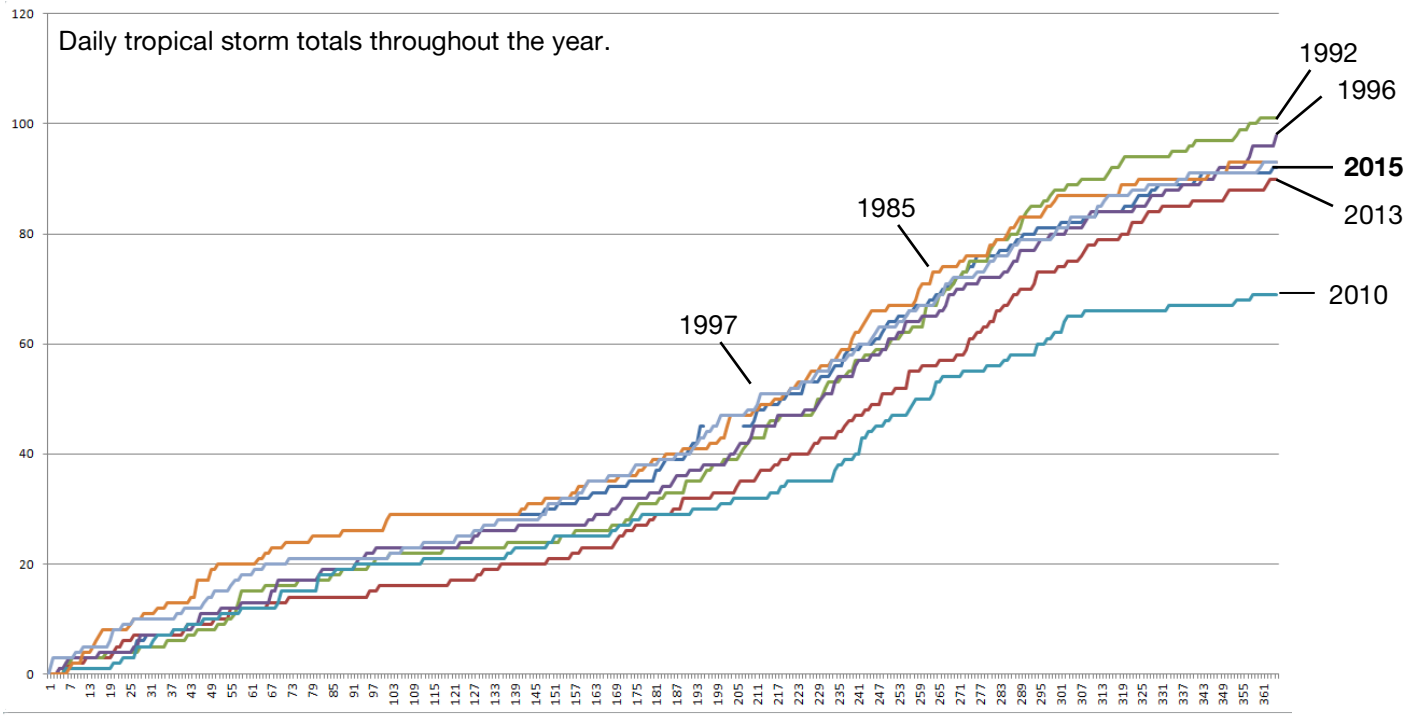
The subscriber base has grown by 966 in 2015, compared to 1,097 in 2014. The main reason for the lower number in 2015 is due to a huge amount of new subscribers (between 350 and 400) during Typhoon Hagupit in 2014.

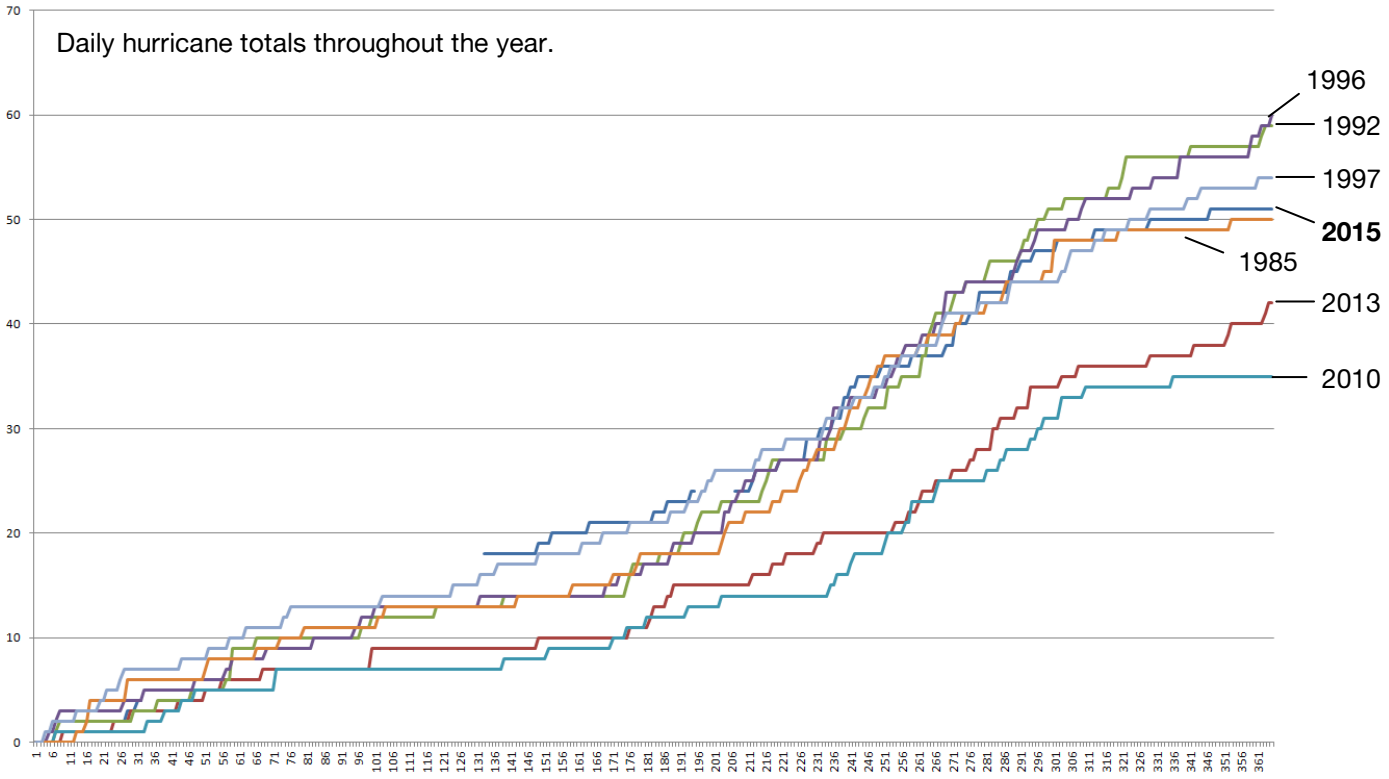
Below shows a table of the top ten countries by viewing numbers compared to 2014.

Country	2015	2014
United States	220,037	175,240
Philippines	76,874	173,113
South Korea	43,271	8,371
United Kingdom	34,780	20,171
Australia	20,744	6,284
Mexico	18,395	12,314
Canada	17,293	15,709
Mauritius	16,968	1,659
Hong Kong	11,177	8,788
Taiwan	8,938	5,750

5. Long Term Trends

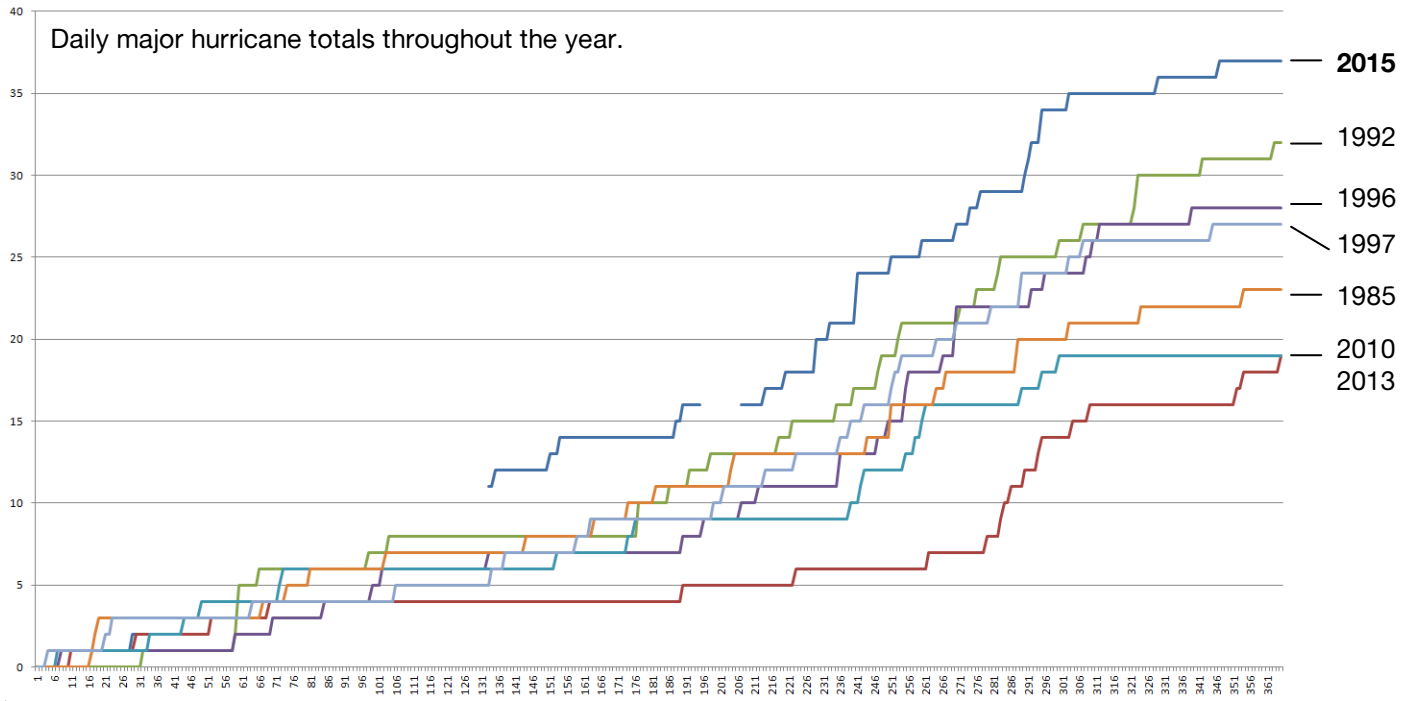
2015 finished with a total of 92 tropical storms, putting it at a tie with 1984 for 7th busiest year on record. Our records begin at 1980.
2015 also had a record amount of major hurricanes, and the third highest amount of Category 5 storms.



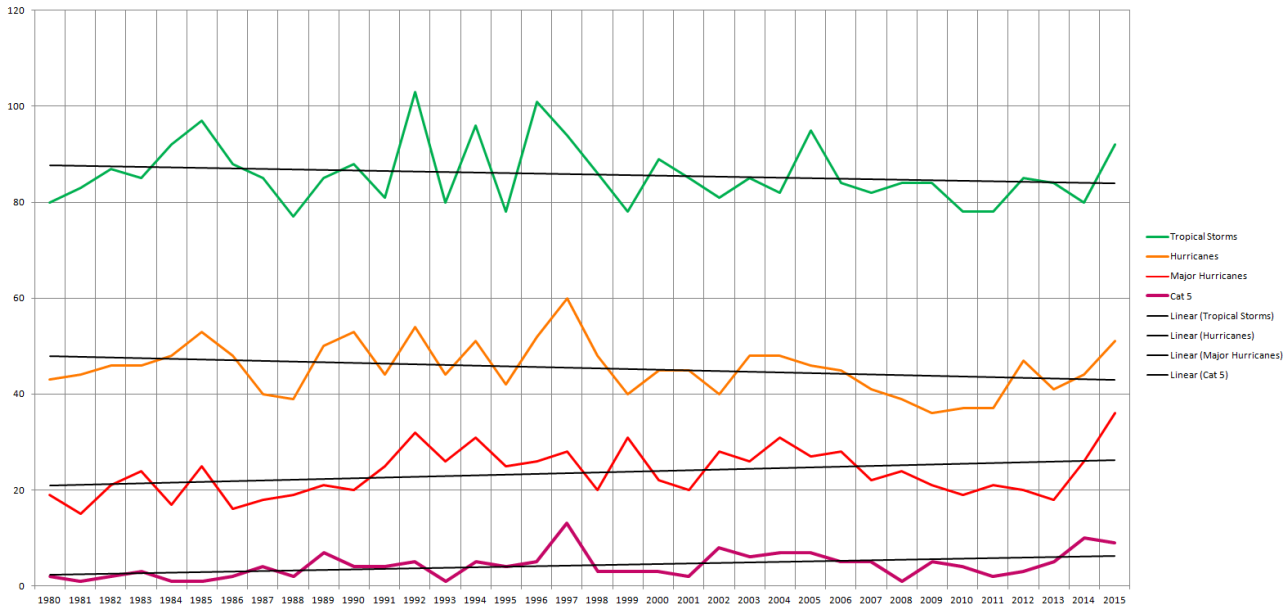


The charts above show how the year progressed with tropical storms and hurricanes. Some data from 2015 is missing, but the final totals are accurate. These graphs show that 2015 was hardly ever setting a record pace during the year, and its plateau of activity is rather akin to what was seen in 1985.

5. Long Term Trends (continued)

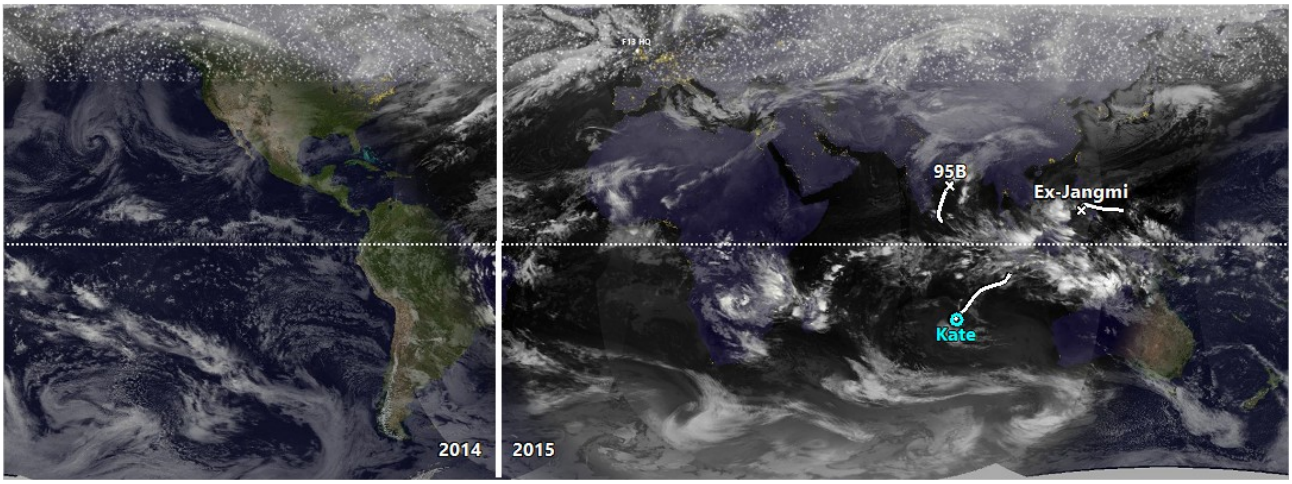


2015 finished with a record amount of major hurricanes, particularly in the Pacific Ocean where the strong El Niño event was taking place. Whilst this is the highest number since our records began in 1980, it is quite possible that historical years from before this record may have reached this number.
Limited research suggests that years in the early 1940s, some of which during El Niño events, may have neared this number.



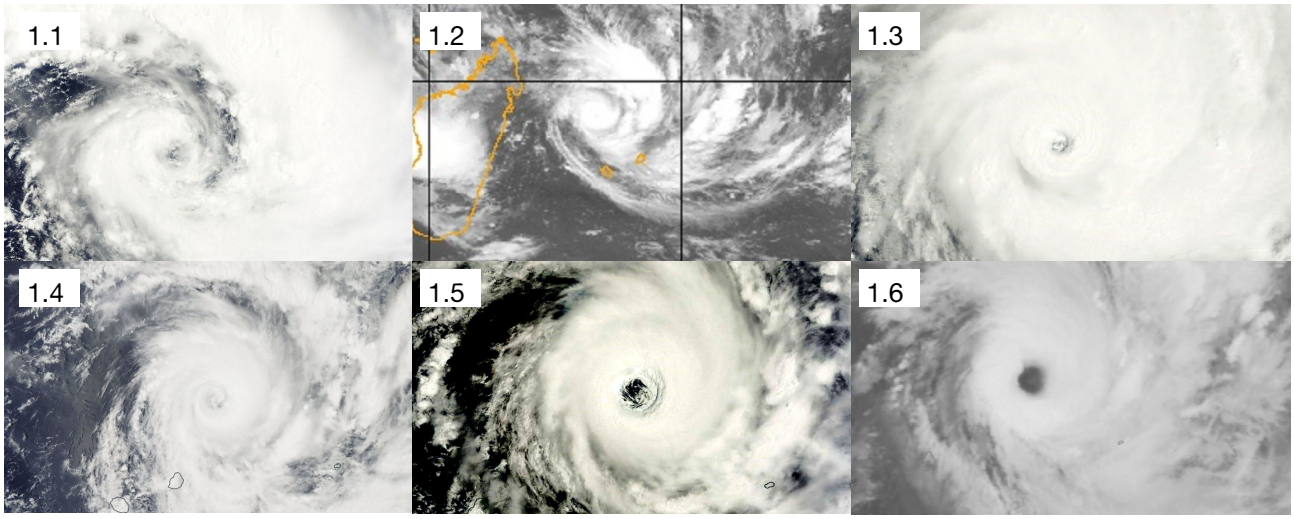
The complete yearly total charts since 1980 are shown in the above image for tropical storms, hurricanes, major hurricanes, and Category 5 storms.
Tropical Storms have been on a slight decline, and remains rather steady with only a few anomalous years, most of them in the 1990s.
Hurricane activity is similar, with a slightly larger decline although numbers have been rising since the record low in 2009.
Since 1980, major hurricane activity has been on an increase, though all of this increase occurred during the 1980s. Since 1990, the trend has been almost completely even. However, another active year in 2016 may change this.
Category five storms are on a slight increase. Most, but not all, of this increase occurred during the 1980s decade. We expect that there will be less Category five storms in 2016.

6. Photo Gallery

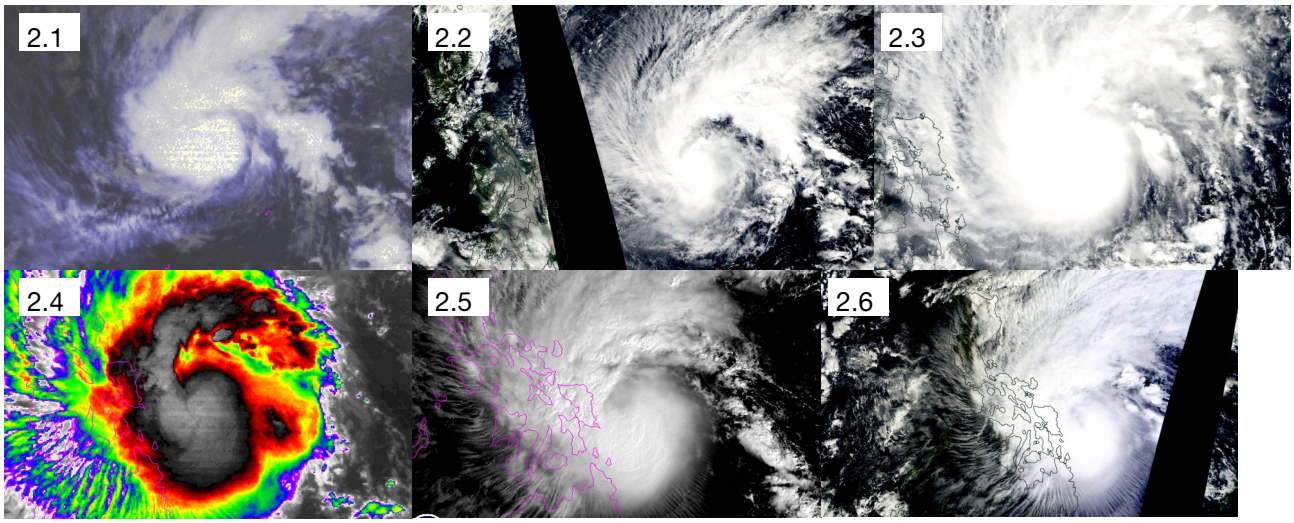


All photos listed on these pages will have a catalogue number, in which you can request a larger downloadable version of the image.

1. Cyclone Bansi

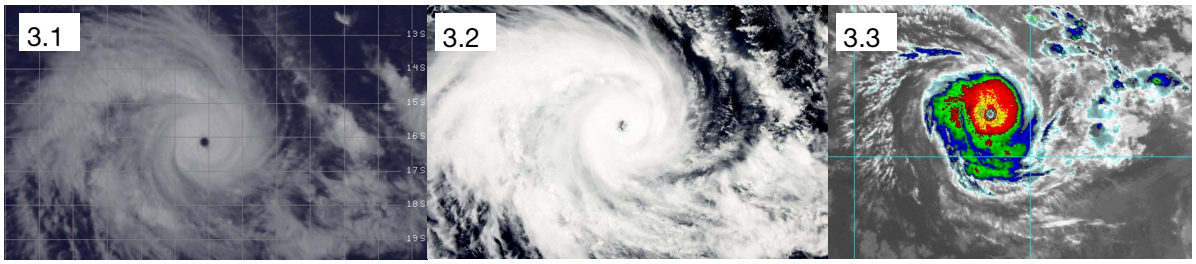


2. Typhoon Mekkhala

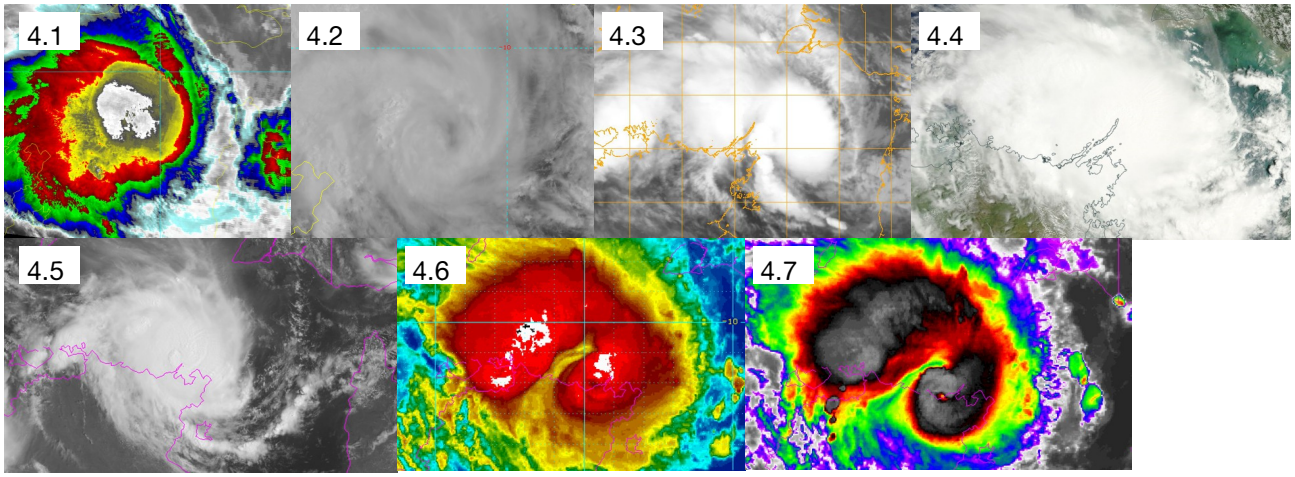


6. Photo Gallery (continued)

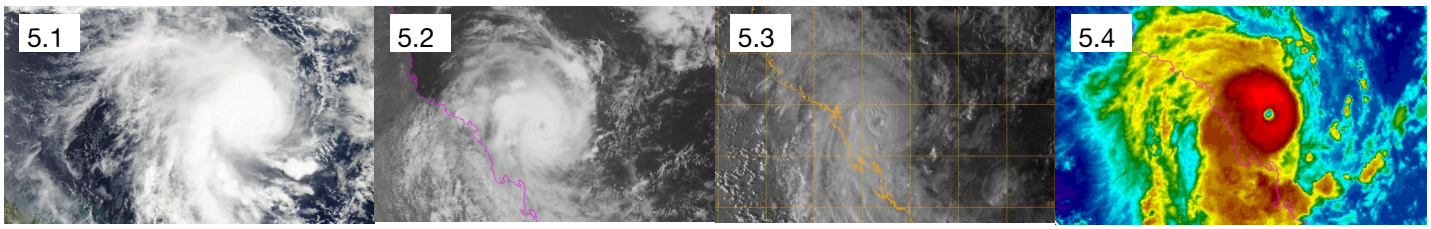
3. Cyclone Eunice



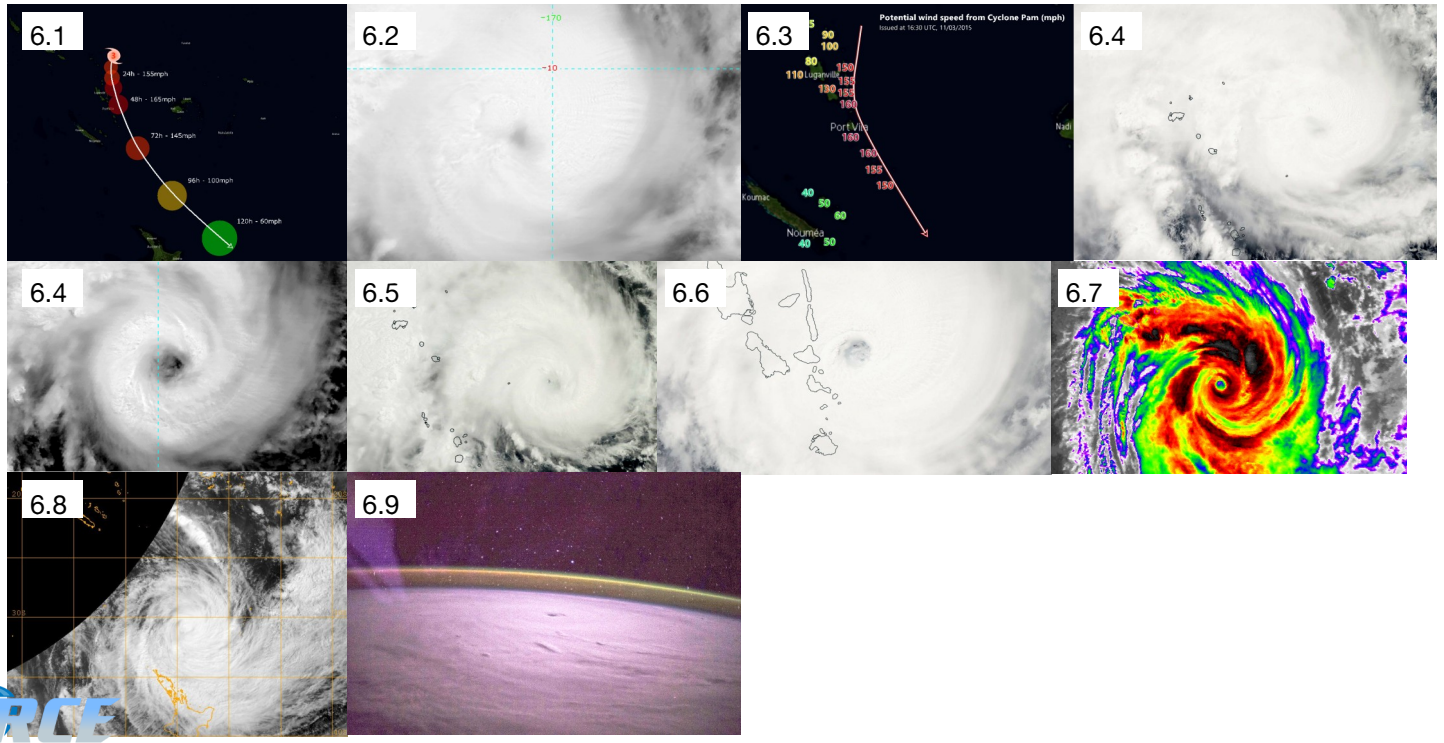
4. Cyclone Lam



5. Cyclone Marcia

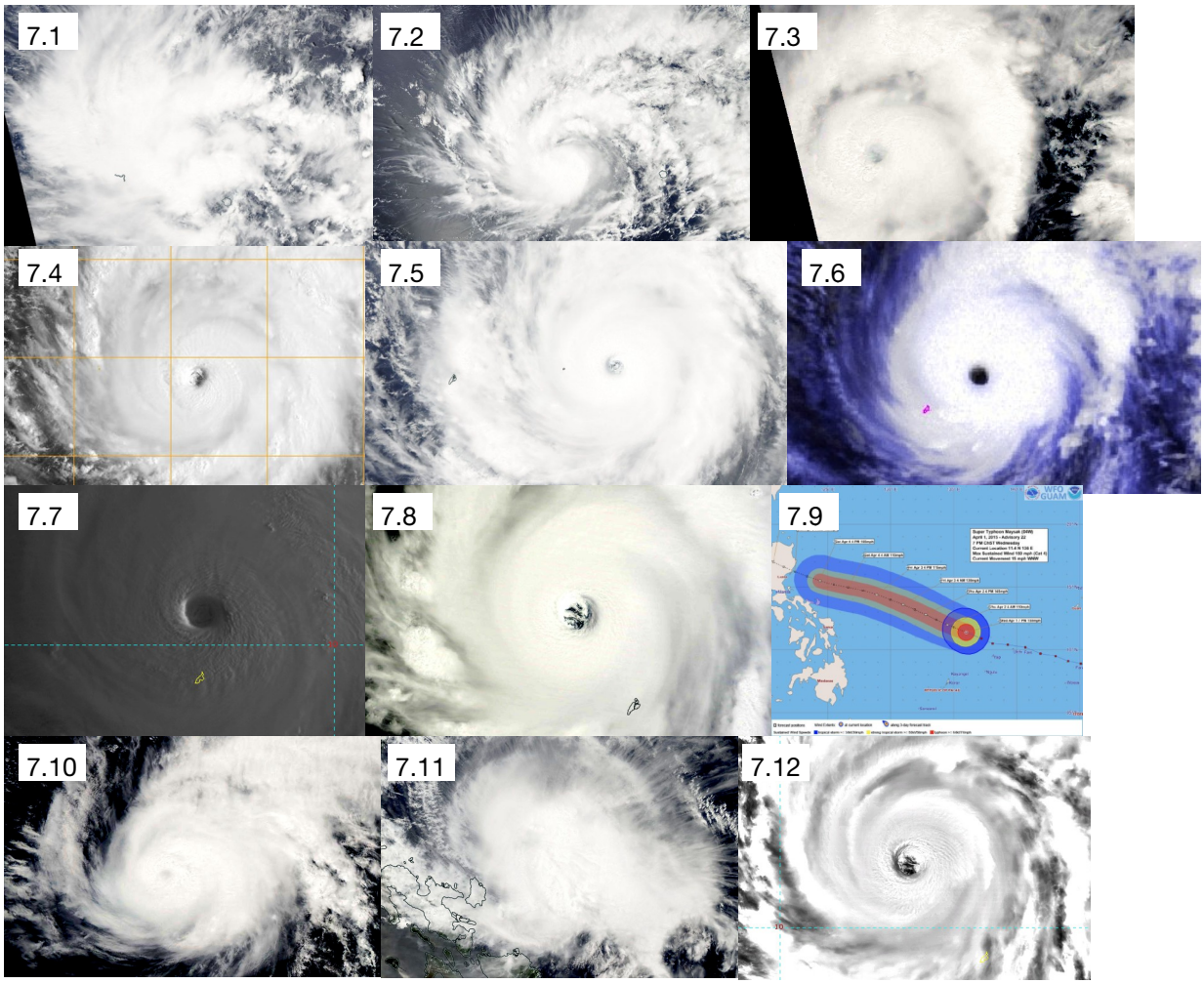


6. Cyclone Pam

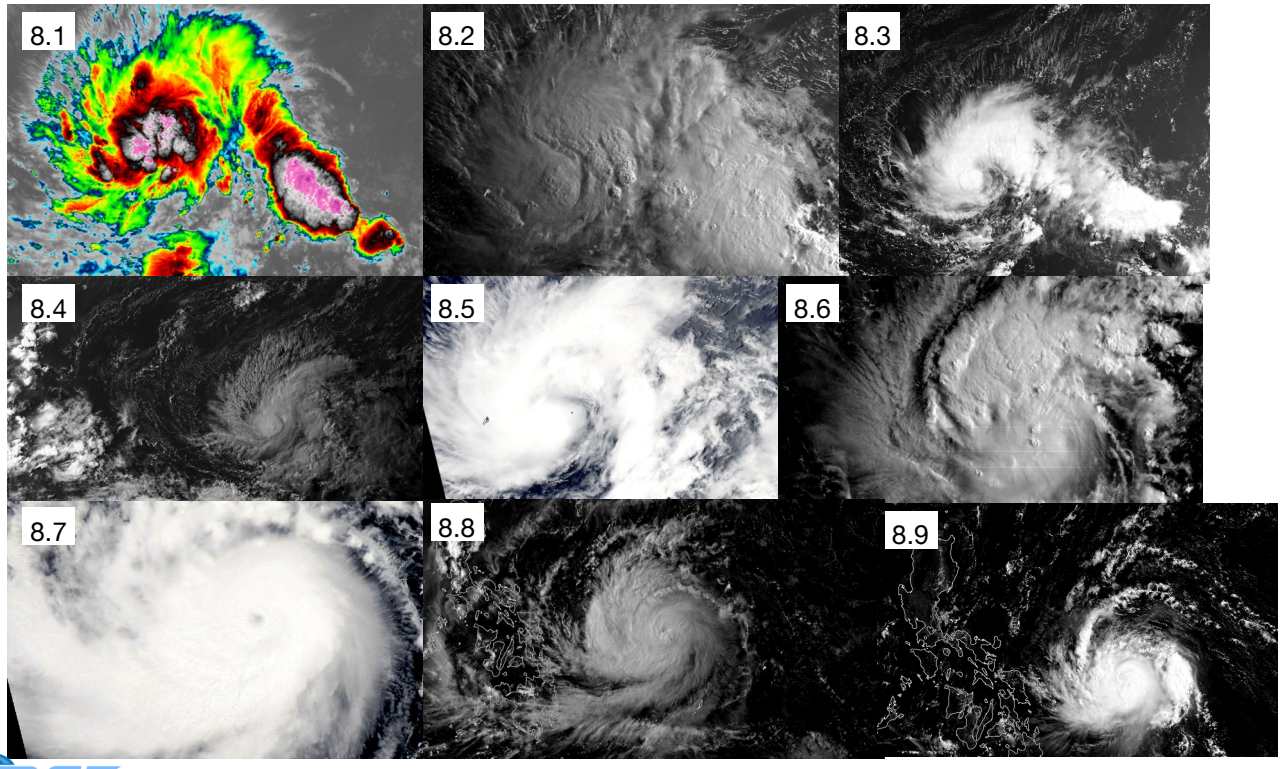


6. Photo Gallery (continued)

7. Typhoon Maysak

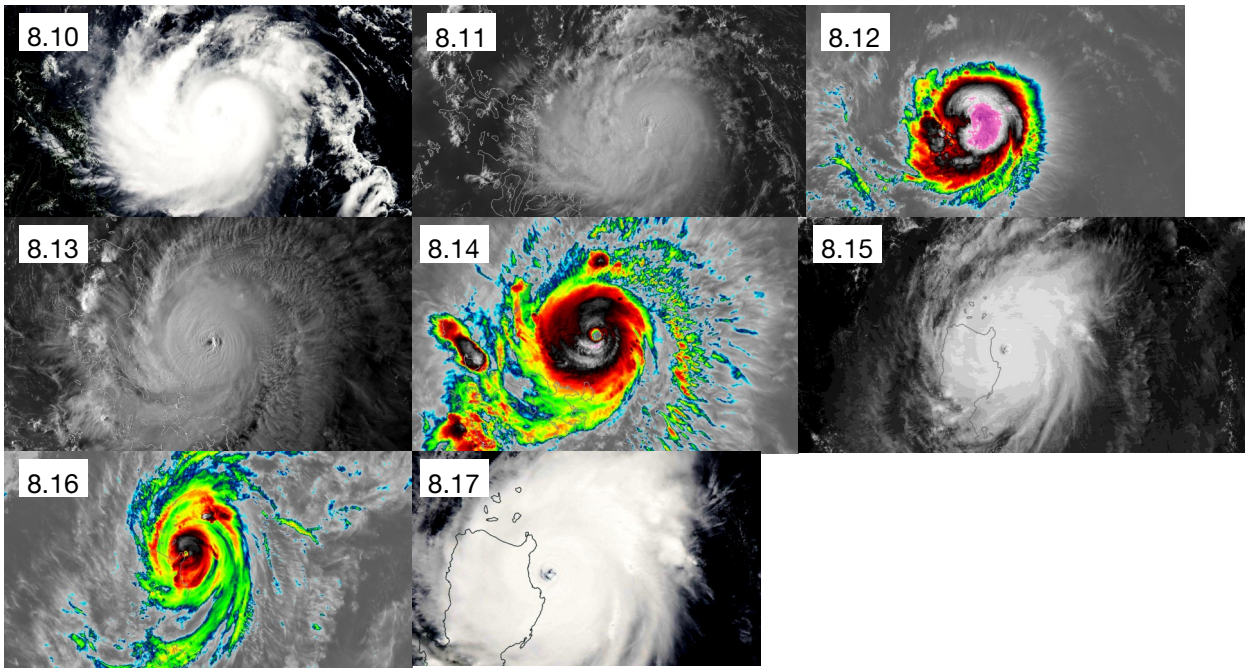


8. Typhoon Noul

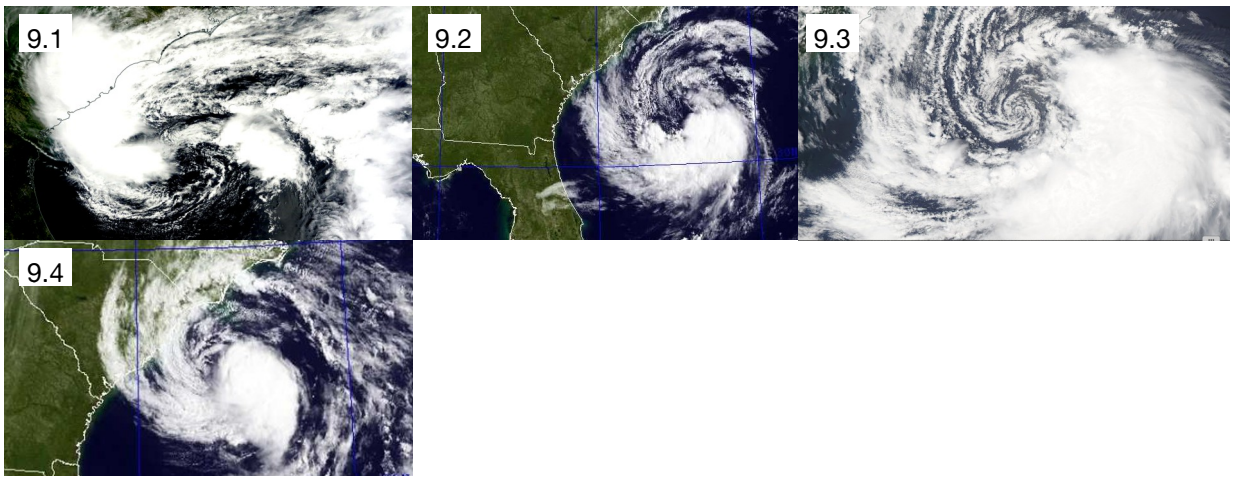


6. Photo Gallery (continued)

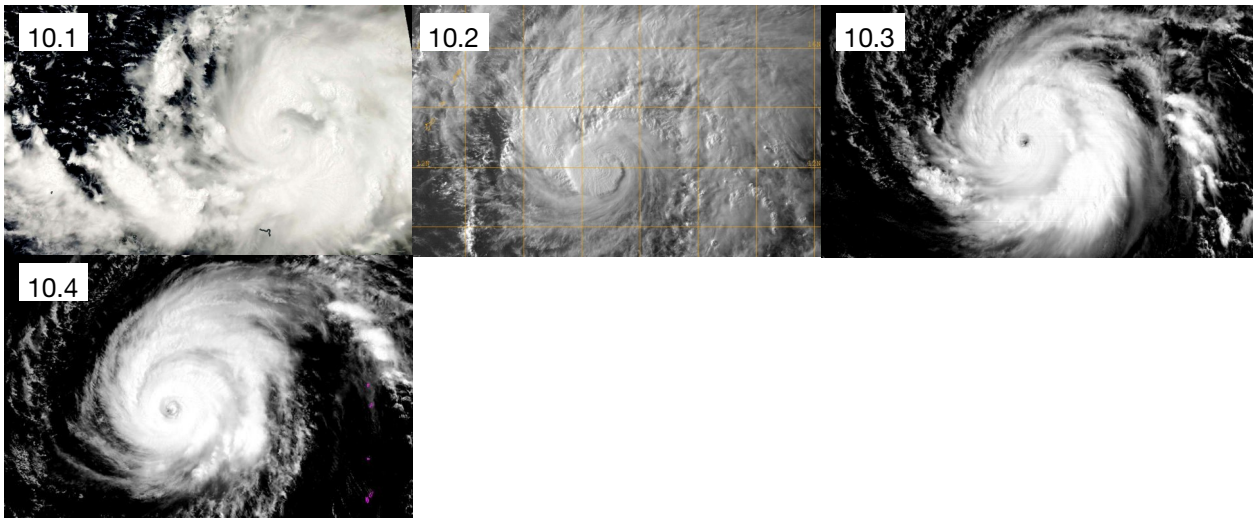
8. Typhoon Noul



9. Tropical Storm Ana



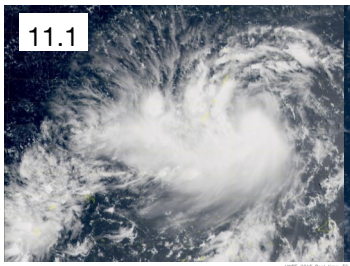
10. Typhoon Dolphin



6. Photo Gallery (continued)

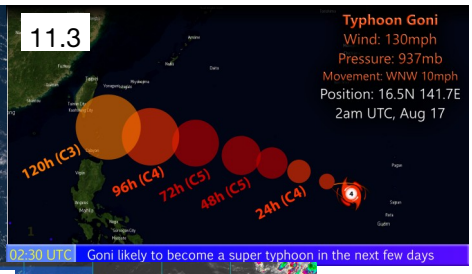
11. Typhoon Goni

11.1

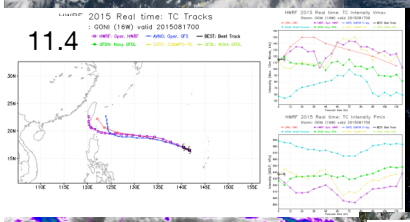


11.2

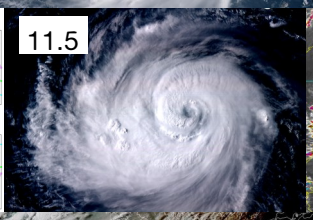
11.3



11.4

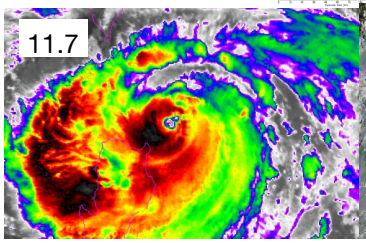


11.5

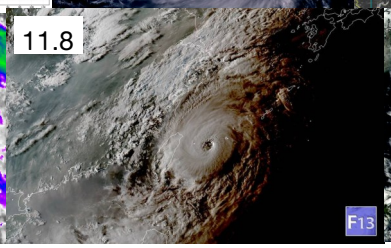


11.6

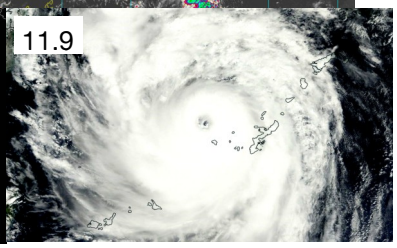
11.7



11.8

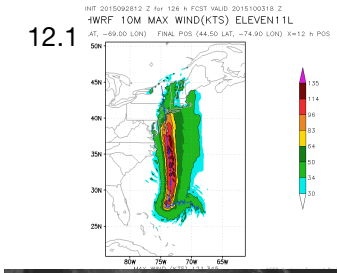


11.9

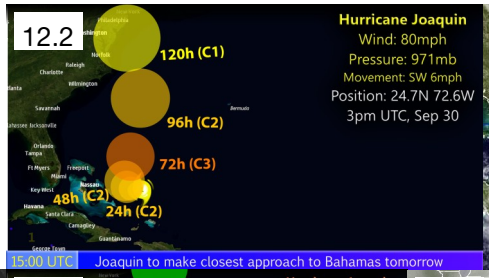


12. Hurricane Joaquin

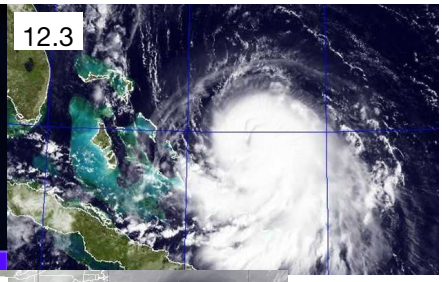
12.1



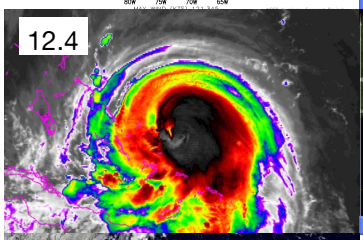
12.2



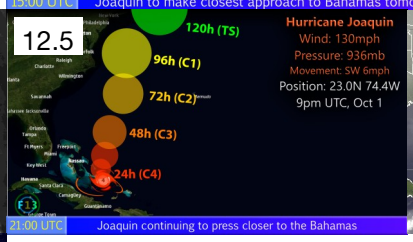
12.3



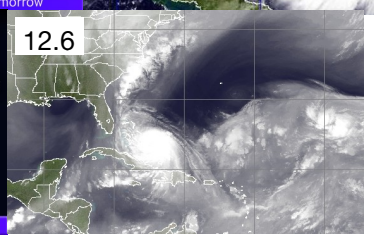
12.4



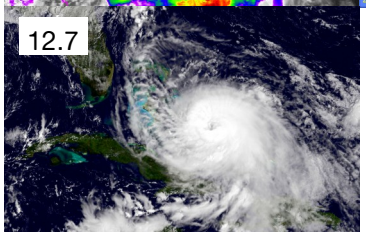
12.5



12.6

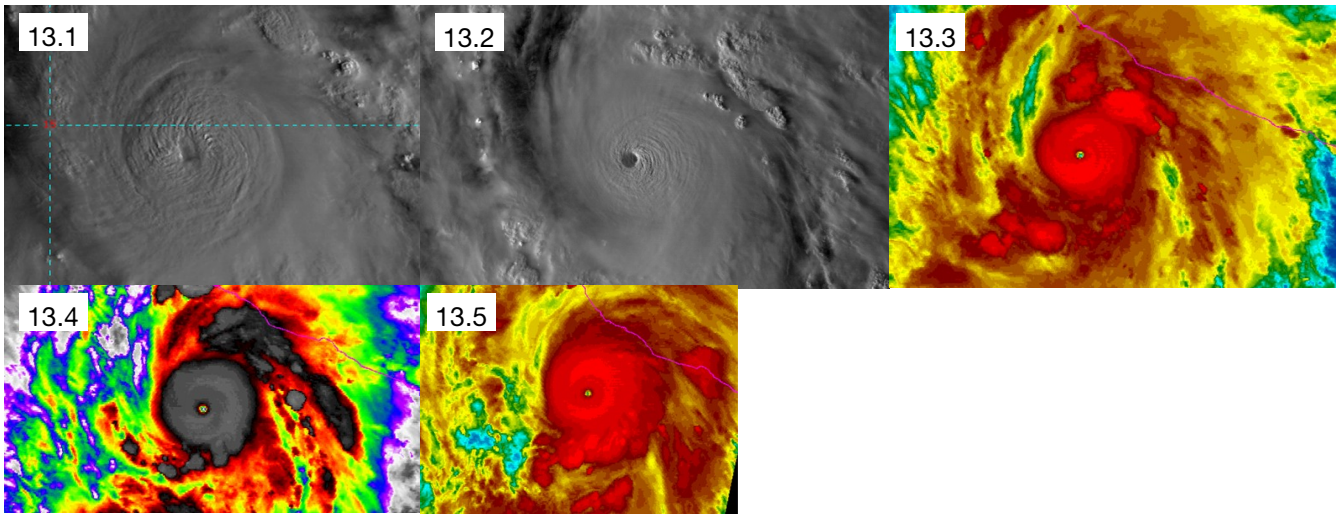


12.7

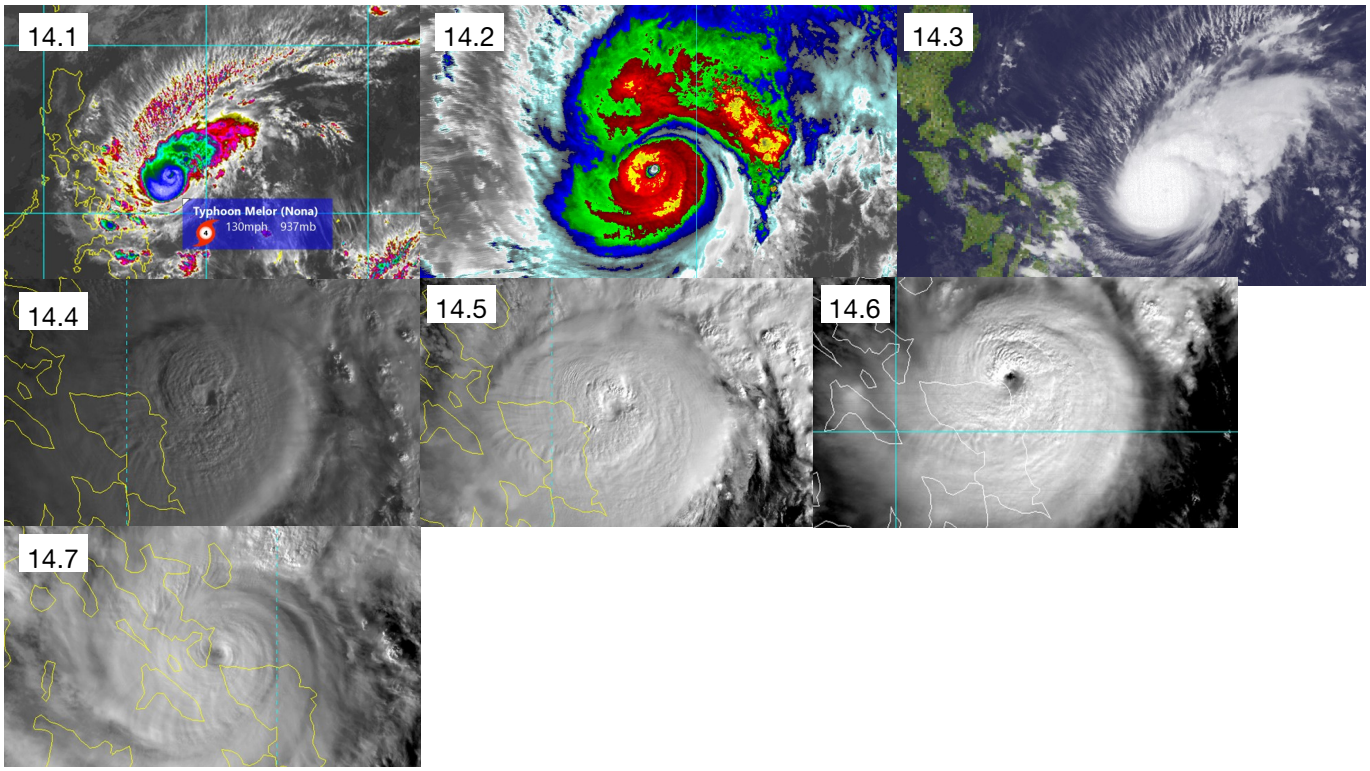


6. Photo Gallery (continued)

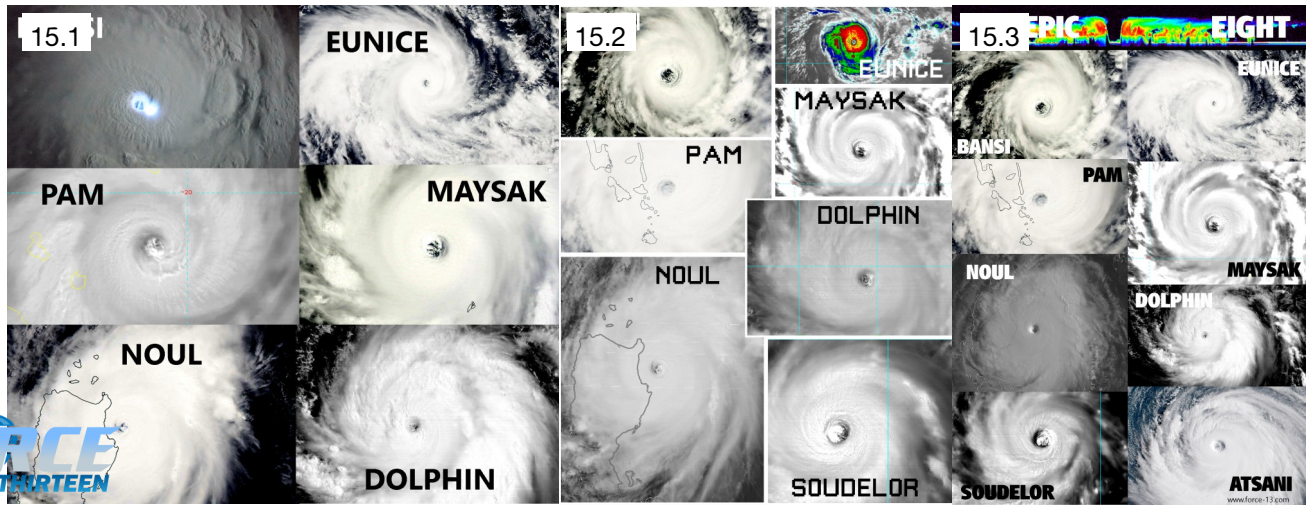
13. Hurricane Patricia



14. Typhoon Melor



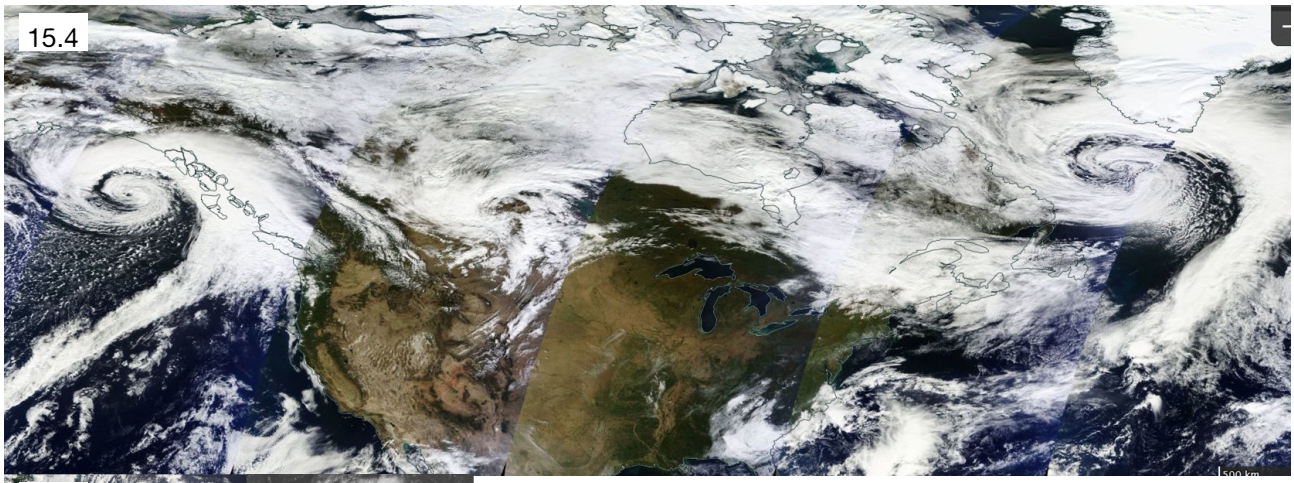
15. Other



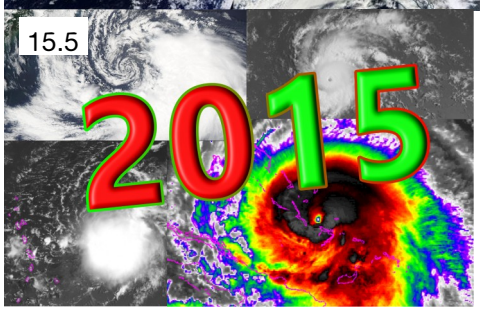
6. Photo Gallery (continued)

15. Other

15.4



15.5



7. Ways to contact Force Thirteen

There are many ways to contact Force Thirteen. If you are seeking to contact a particular person on the team, please send an e-mail to force-13@hotmail.co.uk

E-mail address: force-13@hotmail.co.uk
Website: www.force-13.com
YouTube: Forcethirteen
Facebook: ForceThirteen
Twitter: @ForceThirteen
Skype: Fool13
Soundcloud: Sound Thirteen