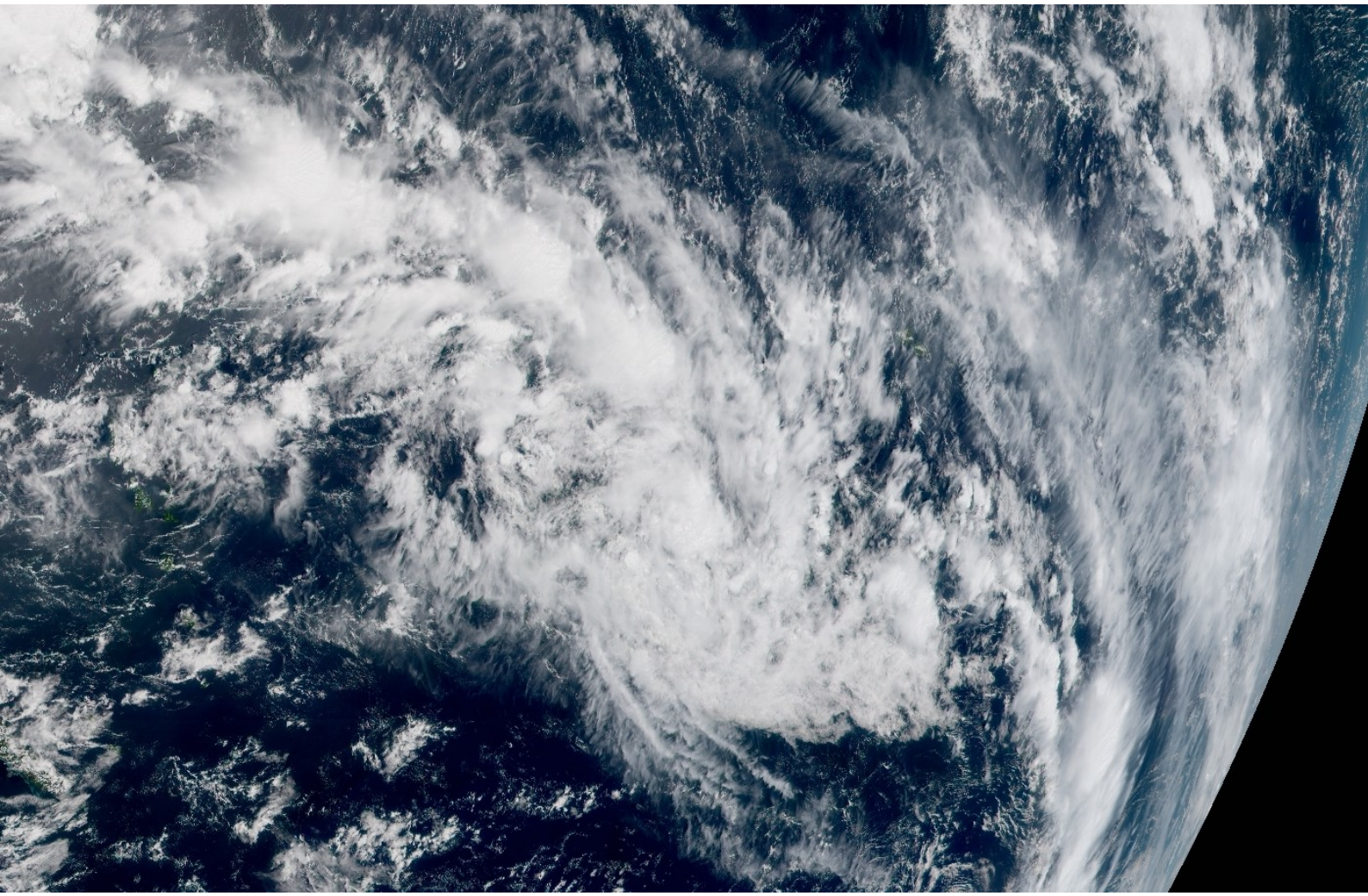
2017

Force Thirteen Cyclone Reports

Cyclone 08P (201706)



Cyclone 08P was a short lived, unnamed cyclone which became a rainmaker for some Pacific islands in the second half of February 2017.

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Cover photo: Himawari-8 image of Cyclone 08P near peak intensity on February 22nd at 00:00 UTC.

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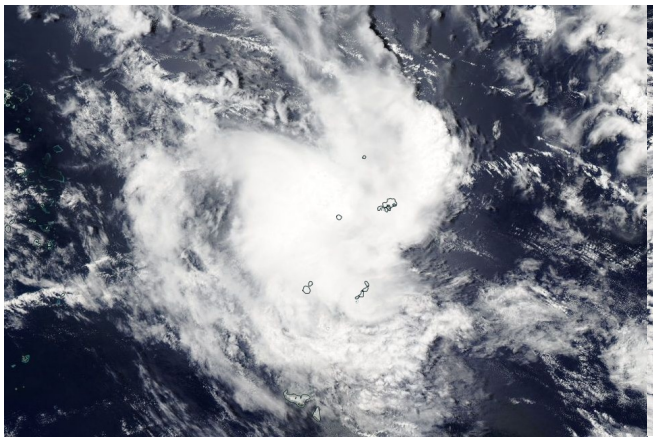
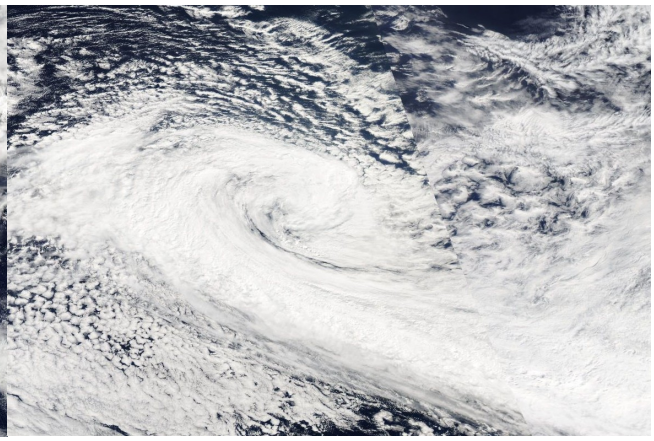
1.1. Synoptic History

On February 20th, a tropical disturbance developed over Fiji, moving southeast. The system developed as it moved towards the southeast and by February 21st it passed close to Niue. Shortly after this, an ASCAT pass showed that the system had a closed center of circulation and winds of 45mph, at which Force Thirteen and the Joint Typhoon Warning Center recognised 08P as a tropical storm. However, RSMC Nadi never named the system.

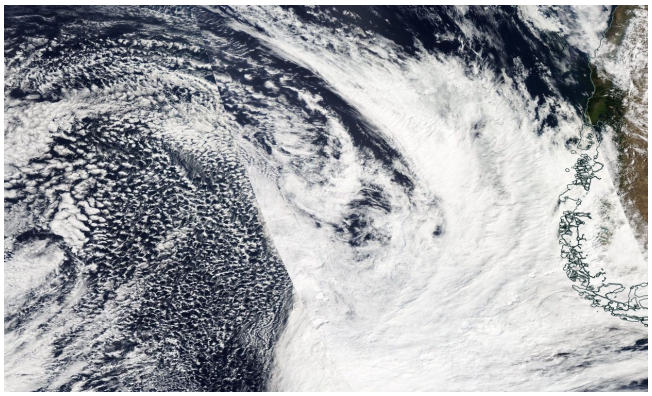
The storm quickly lost its circulation and convection and degenerated into a remnant low within hours. However, the system remained recognisable and by February 24th had regained strength, albeit as an extratropical cyclone. The storm continued across the south Pacific, making landfall in Chile as an extratropical remnant on February 28th.



February 23rd



February 26th



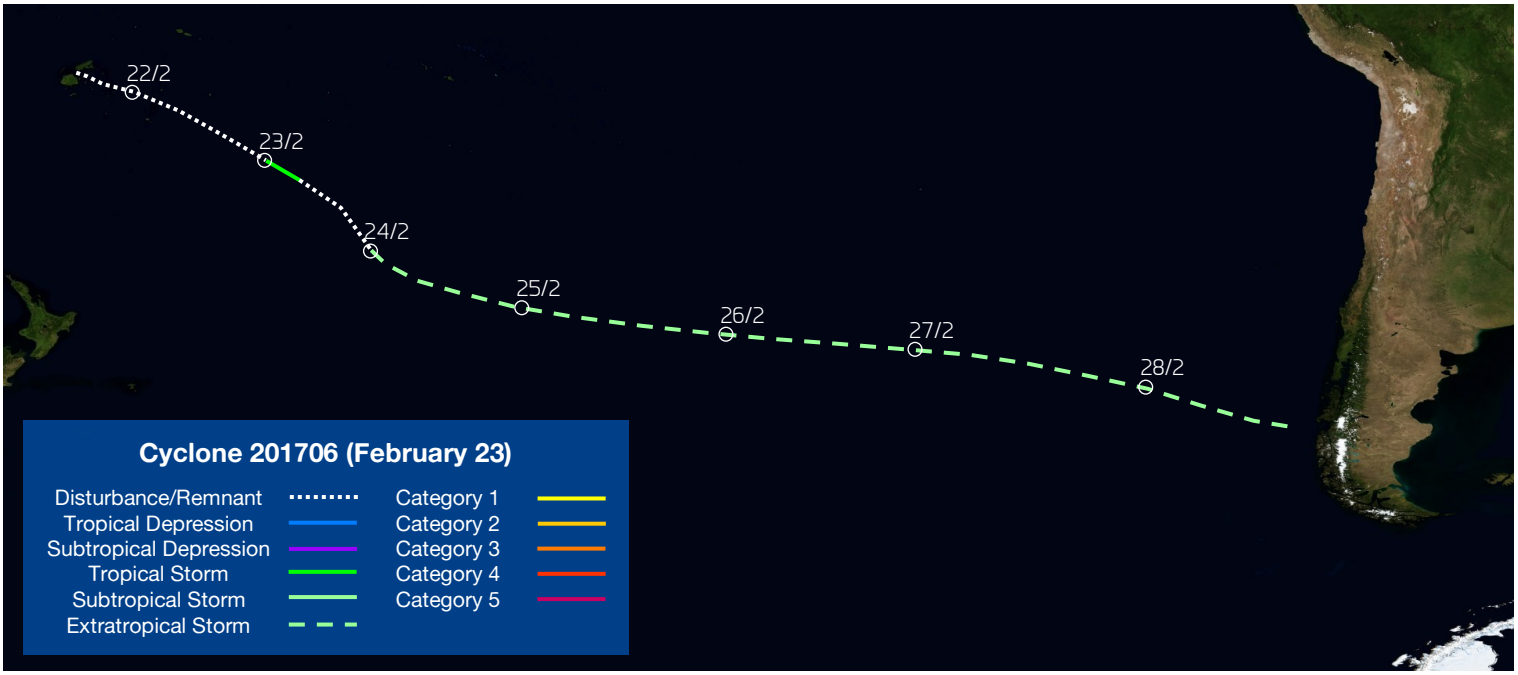
February 27th

1.2. Best Track

Below is the best track analysis from Force Thirteen, using Force Thirteen's SATOPS—a tool which uses infrared satellite imagery and cloud temperatures to estimate a storm's wind speed and air pressure. SATOPS does not take precedence over surface observations.

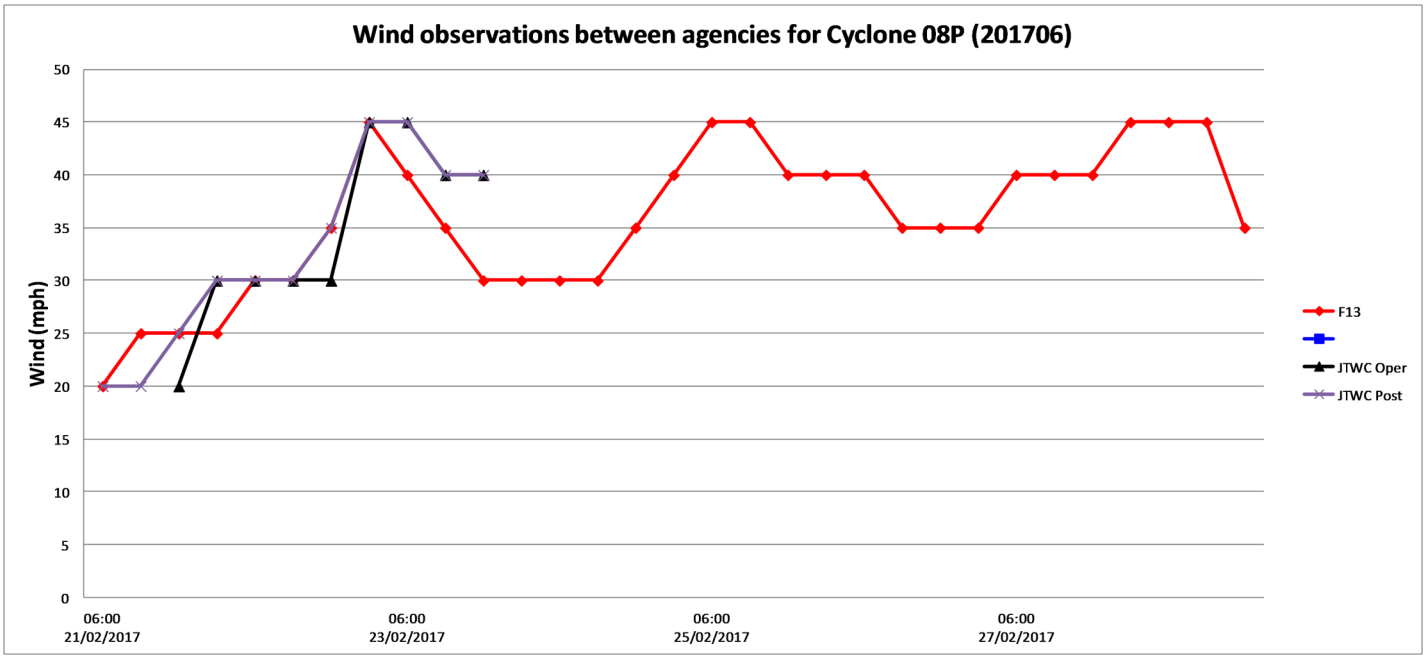
Date (dd/mm/yyyy)	Time	Latitude	Longitude	F13	F13	Stage
21/02/2017	06:00	-17.8	178.9	20	1006	Tropical Disturbance
21/02/2017	12:00	-17.9	179.8	25	1004	Tropical Disturbance
21/02/2017	18:00	-19.1	-178.8	25	1004	Tropical Disturbance
22/02/2017	00:00	-19.9	-176.1	25	1004	Tropical Disturbance
22/02/2017	06:00	-20.9	-172.3	30	1002	Tropical Disturbance
22/02/2017	12:00	-21.9	-169.7	30	1001	Tropical Disturbance
22/02/2017	18:00	-24.6	-167.7	35	999	Tropical Disturbance
23/02/2017	00:00	-26.8	-164.6	45	996	Tropical Storm
23/02/2017	06:00	-27.9	-161.8	40	998	Remnant Low
23/02/2017	12:00	-29.9	-160.8	35	999	Remnant Low
23/02/2017	18:00	-30.6	-159.8	30	1000	Remnant Low
24/02/2017	00:00	-32.2	-155.5	30	1000	Extratropical
24/02/2017	06:00	-34.5	-151.9	30	1000	Extratropical
24/02/2017	12:00	-36.2	-149	30	998	Extratropical
24/02/2017	18:00	-37.5	-149.2	35	996	Extratropical
25/02/2017	00:00	-38.6	-146.2	40	994	Extratropical
25/02/2017	06:00	-39.7	-143.1	45	992	Extratropical
25/02/2017	12:00	-41.1	-139.6	45	992	Extratropical
25/02/2017	18:00	-42.4	-136	40	993	Extratropical
26/02/2017	00:00	-42.6	-132	40	993	Extratropical
26/02/2017	06:00	-42.9	-127	40	993	Extratropical
26/02/2017	12:00	-43.2	-123	35	994	Extratropical
26/02/2017	18:00	-43.5	-118	35	994	Extratropical
27/02/2017	00:00	-44	-113	35	993	Extratropical
27/02/2017	06:00	-44.8	-108	40	992	Extratropical
27/02/2017	12:00	-45.6	-102	40	991	Extratropical
27/02/2017	18:00	-46.5	-96	40	989	Extratropical
28/02/2017	00:00	-47.1	-91	45	987	Extratropical
28/02/2017	06:00	-47.5	-86	45	985	Extratropical
28/02/2017	12:00	-48	-81	45	985	Extratropical
28/02/2017	18:00	-49	-76	35	990	Extratropical

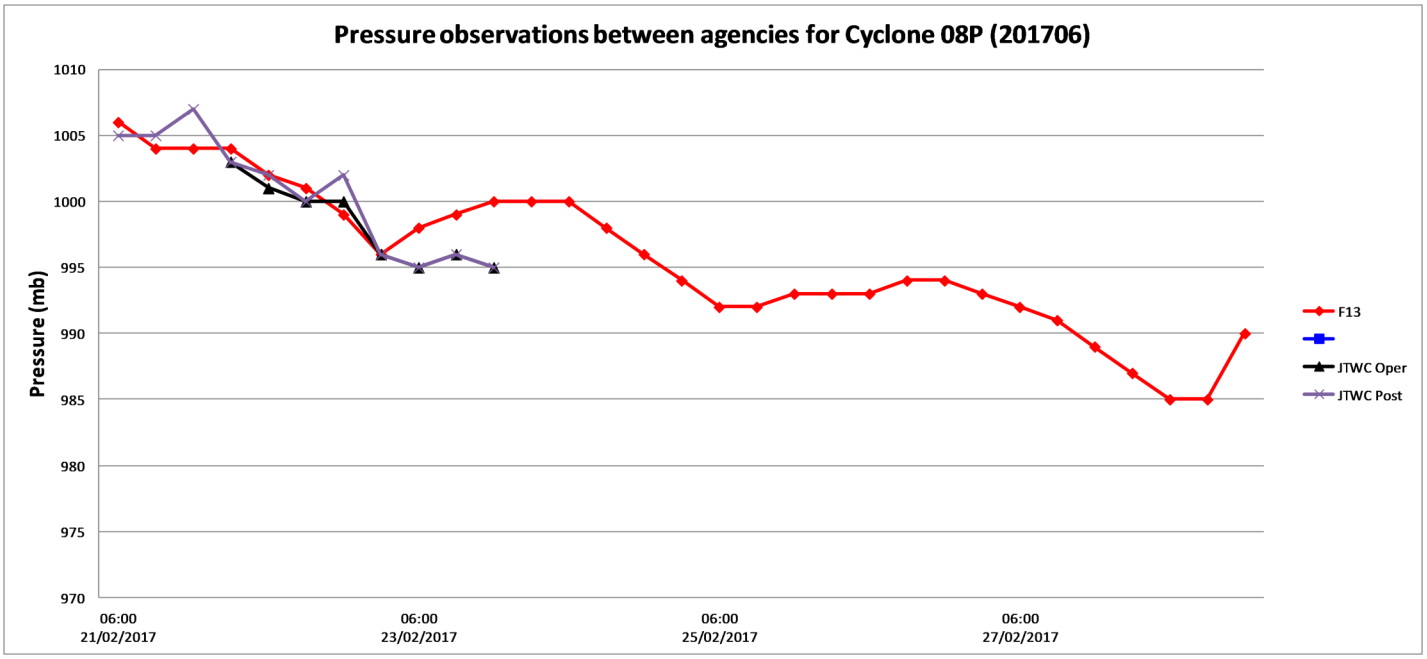
1.3. Track Chart



1.4. Comparison with other agencies

08P was monitored by the Regional Specialized Meteorological Centre in Nadi, Fiji, and by the U.S. Joint Typhoon Warning Center. Best track data is not yet available from the RSMC Nadi, and so below shows comparisons between the JTWC and Force Thirteen's Best Track.

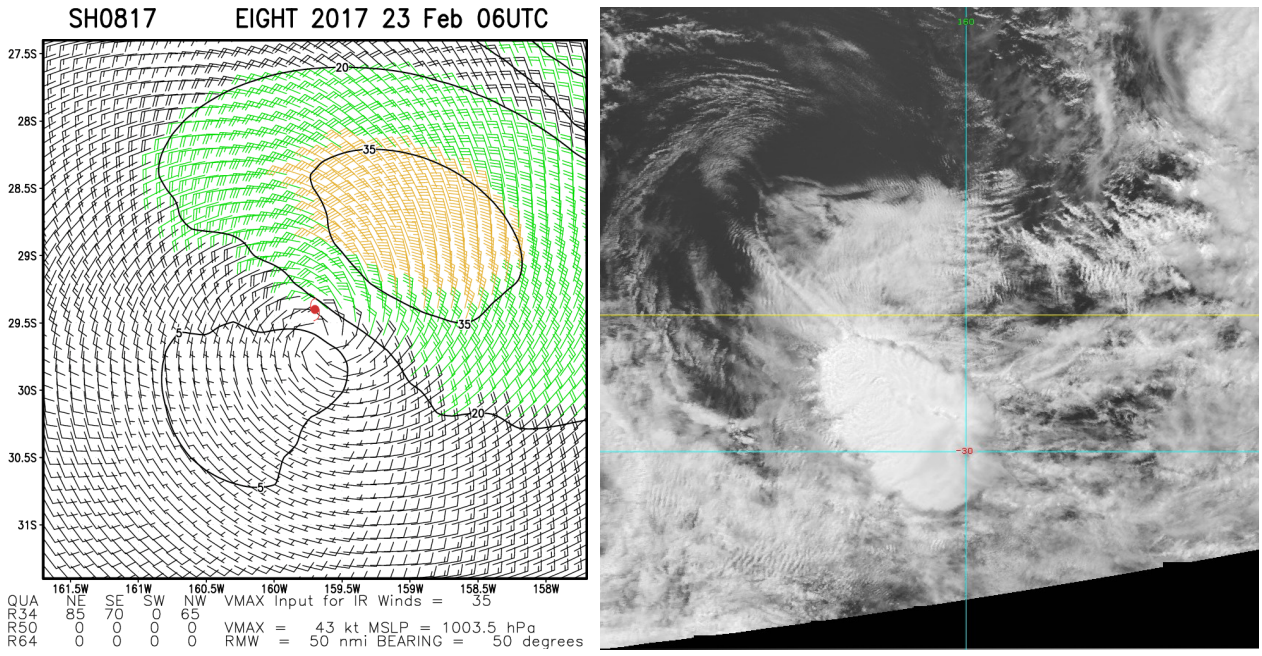




2. Effects on Land

Cyclone 08P passed close to the Cook Islands, delivering significant amounts of rainfall to the islands. Fiji received small amounts of rain from the storm also. The extratropical remnants delivered up to 50mm (2in) of rainfall along the coast of Chile.

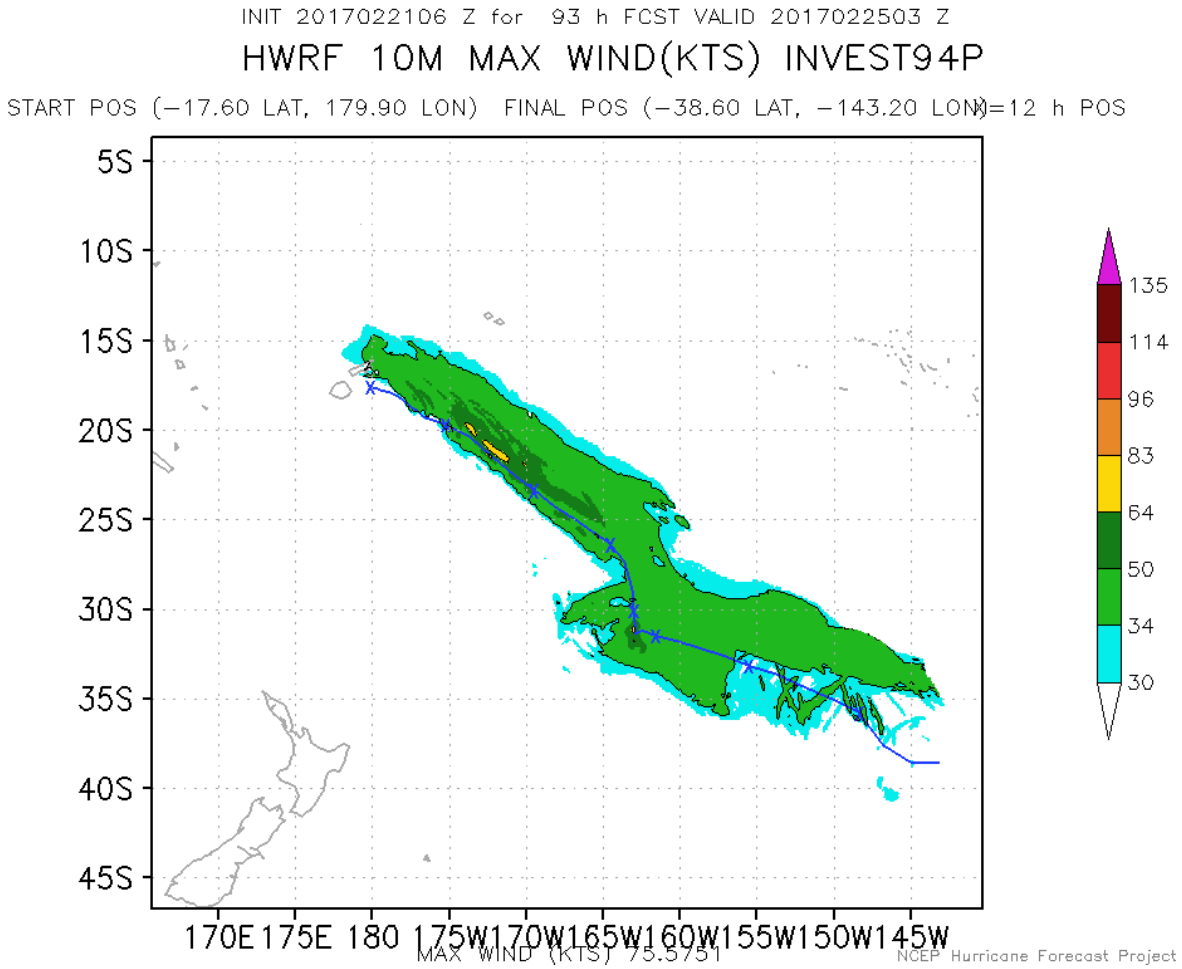
Rainfall totals derived from satellite observations:
Rarotonga 100mm (4 in)



Satellite estimated winds and visible satellite image of Cyclone 08P near peak intensity.

3. Forecasting Critique

Initial computer model runs from the HWRF, GFDL and CMC overestimated the storm, with the former predicting a hurricane strength system. With Cyclone Bart not too far in front of 08P, the situation was more complex than usual. By the time the system became a tropical storm, models were in agreement that the storm would be short lived, a view shared by the Joint Typhoon Warning Center in its forecast.

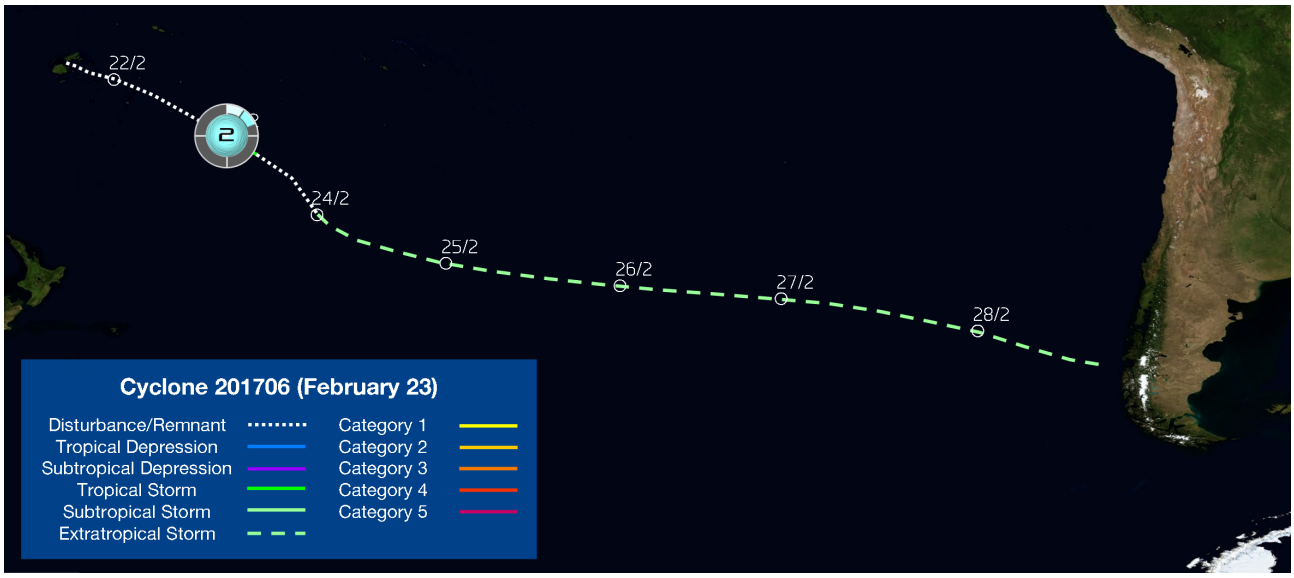


The first model run from the HWRF, showing 08P as a hurricane strength cyclone, issued at 06:00 UTC on February 21st.

4. Cyclone Destruction Potential Scale

The Cyclone Destruction Potential Scale (CDPS) is a new way of measuring cyclone impacts in a more meaningful way. For the past 45 years, storms worldwide have been measured using the Saffir-Simpson Hurricane Wind Scale, split into five categories. However, this scale measures wind alone, and does not correlate well with actual impacts on land, measured by monetary damage.
The CDPS measures other factors, such as storm size and forward speed as well as intensity to create a ten tiered scale that encompasses tropical storms as well as hurricanes.

Stage 1—Small or weak storms that are unlikely to cause a significant impact.
Stage 2—Generally disorganised storms that can cause significant damage.
Stage 3—Further organised systems that are likely to cause significant damage.
Stage 4—Somewhat powerful storms that are likely to cause extensive damage.
Stage 5—Powerful storms that are likely to cause devastating damages.
Stage 6—Very powerful storms that are likely to cause catastrophic damage.
Stage 7—Extremely powerful storms that are likely to cause catastrophic damage.
Stage 8—Super storms that are likely to cause incredible damage.
Stage 9—Super storms that may cause total damage.
Stage 10—Super storms that are likely to cause total damage.



Cyclone 08P was the fifth storm to be observed by Force Thirteen using the CDPS—a method which was adopted in January 2017.

08P was a Stage 2 cyclone at peak.

The Cyclone Destruction Potential Scale was created by Devon Williams in 2016. More information can be found at: https://drive.google.com/file/d/0B7pEWk6yHKggSE1STHg2UFJmbHM/view

5. Force Thirteen's Coverage on 08P

Force Thirteen issued no updates during Cyclone 08P, due to its short existence and no threat to land.

Comments, suggestions and inquiries should be directed to force-13@hotmail.co.uk, or any of Force Thirteen's online platforms.