

# The Cluster Wave Experiment Consortium

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## WEC commissioning

This page summarizes the status of the commissioning of the Cluster WEC instruments.

### Latest status

The final deployment of the last pair of booms on SC4 took place on 16 November. This completed the sequence of boom deployments, which have all been successful, and was followed by a small celebration at ESOC. See also the story at the [Cluster home page](#).

At the end of last week, 9-10 November, a major event on the Sun compressed the magnetosphere so that the spacecraft entered the magnetosheath several times. It also caused disturbances to the operation of some instruments, including WEC.

### Event timeline

The table below gives details of when the various steps in the WEC commissioning were performed on the different spacecraft. For more information on each step, please consult the WEC User Manual.

Date/Time UT	Spacecraft 1 Rumba	Spacecraft 2 Salsa	Spacecraft 3 Samba	Spacecraft 4 Tango
000825 0003-0026		A2 1st WEC on		
000825 0056-0115		A2 redundant i/f		
000825 0136-0215		A4 1st full WEC on		
000825 0218-0404		A3 DWP checkout		
000825 0407		A5 DWP+EFW on		
000825 0415-0425		A6 EFW verif (incomplete)		
000825 0445-0455		A6 EFW verif		
000825 0555-0605		A8 EFW verif		
000829 1842-1915	A2 1st WEC on			
000829 2003-2022	A2 redundatnt i/f			

000829 2051-2129	A4 1st full WEC on			
000829 2137-2323	A3 DWP checkout			
000829 2326	A5 DWP+EFW on			
000829 2340-2350	A6 EFW verif			
000830 0020-0030	A8 EFW verif			
000830 0110-0140	B6 EFW diagnostics			
000905 1647		B1 DWP+EFW on		
000905 1726		B2 Open covers on units 1+2		
000905 1743		B2 Open covers on units 3+4		
000905 1812-1816		B3 Booms 3+4: 0-3 m Spin: 15.04-14.95 rpm		
000905 1826-1843		B3 Booms 3+4: 3-15 m Spin: 14.95-13.35 rpm		
000905 1904-1910		B4 Booms 1+2: 0-3 m Spin: 13.35-13.27 rpm		
000905 1920-1940		B4 Booms 1+2: 3-15 m Spin: 13.27-11.97 rpm		
000905 2100-2102		B5 Spin up: 11.97-21.86 rpm		
000905 2145-2220		B6 EFW diagnostics		
000905 2225		B7a WHISPER diagnostics		
000905 2245		B7b WHISPER diagnostics		
000905 2320		B8 STAFF diagnostics		
000905 2355		B9 WBD BM2 diagnostics		
000906 0115-0145		B10 WBD DSN diagnostics		
000907 2028		B1 DWP+EFW on		
000907 2054		B2 Open covers on units 1+2		
000907 2104		B2 Open covers on units 3+4		

000907 2123-2128	B3 Booms 3+4: 0-3 m Spin: 15.14-15.04 rpm			
000907 2141-2201	B3 Booms 3+4: 3-15 m Spin: 15.04-13.43 rpm			
000907 2221-2227	B4 Booms 1+2: 0-3 m Spin: 13.43-13.34 rpm			
000907 2255-2320	B4 Boom 1: 3-15 m Boom 2: 2-18.5 m Spin: 13.34-11.71 m			
000908 0100-0102	B5 Spin up: 11.71-21.77 rpm			
000908 0120-0200	B6 EFW diagnostics			
000908 0215	B7a WHISPER diagnostics			
000908 0235	B7b WHISPER diagnostics			
000908 0305	B8 STAFF diagnostics			
000908 0350	B9 WBD BM2 diagnostics			
000908 1014-1044	B10 WBD DSN diagnostics (not captured by DSN)			
000909 0226-0536		B10.1 WEC diagnostics		
000909 2115-0031		B10.4 WEC diagnostics		
000912 1037		C1 DWP+EFW on		
000912 1114-1142		C2 Booms 3+4: 15-35 m Spin: 21.84-14.33 rpm		
000912 1211-1219		C3 Booms 1+2: 15-20 m Spin: 14.33-13.58 rpm		
000912 1235-1310		C4 EFW diagnostics		
000912 1315		C5 WHISPER diagnostics		

000912 1350		C6 STAFF diagnostics		
000913 1208-1518		C7.1 WEC diagnostics		
000914 1402-1417		C8 WBD BM2 diagnostics		
000914 1442-1801		C7.4 WEC diagnostics		
000916 0250-0600	B10.1 WEC diagnostics			
000916 2209-0124	B10.4 WEC diagnostics			
000918 2000		D0 Spin up: 13.58-17.48 rpm		
000918 2037		D1 DWP+EFW on		
000918 2113-2122		D2 Booms 3+4: 35-41 m Spin: 17.48-14.96 rpm		
000918 2127-2135		D4 EFW diagnostics (aborted)		
000918 2138-2213		D4 EFW diagnostics		
000918 2235		D5 WHISPER diagnostics		
000918 2308		D6 STAFF diagnostics		
000918 2345		E9 STAFF HBR diagnostics		
000920 1425-1735		D7.1 WEC diagnostics		
000920 1833	C1 DWP+EFW on			
000920 1907-1939	C2 Booms 3+4: 15-35 m Spin: 21.79-14.45 rpm			
000920 2006-2013	C3 Boom 1: 15-20 m Spin: 14.45-14.07 rpm			
000920 2028-2030	C3 Boom 2: 18.5-20 m Spin: 14.07-13.94 rpm			

000920 2045-2120	C4 EFW diagnostics			
000920 2128-2154	C5 WHISPER diagnostics			
000920 2156-2228	C6 STAFF diagnostics			
000921 0214-0244	WBD DSN diagnostics			
000921 1720-1735		D8 WBD BM2 diagnostics		
000921 1720-2030	C7.1 WEC diagnostics			
000921 1740-2056		D7.4 WEC diagnostics		
000923 0409-0726	C7.4 WEC diagnostics	D9.1 WEC diagnostics		
000923 0739-0754	C8 WBD BM2 diagnostics	D10 WBD BM2 diagnostics		
000924 0535-0848		D9.4 WEC diagnostics		
000925 1938-1940	D0 Spin up: 13.94-17.54 rpm			
000925 1953	D1 DWP+EFW on			
000925 2016-2026	D2 Booms 3+4: 35-41 m Spin: 17.54-15.03 rpm			
000925 2035-2110	D4 EFW diagnostics			
000925 2117-2143	D5 WHISPER diagnostics			
000925 2150-2222	D6 STAFF diagnostics			
000925 2225	E9 STAFF HBR diagnostics			
000926 1536-1846	D7.1 WEC diagnostics			
000927 2314-	D7.4 WEC diagnostics			
000927 2320-0230		D11.1 WEC diagnostics		
000928 0245	D8 WBD BM2 diagnostics			

000928 1944-1959		D12 WBD BM2 diagnostics		
000928 2004-2317		D11.4 WEC diagnostics		
000930 0501-0811	D9.1 WEC diagnostics			
000930 0835-0850	D10 WBD BM2 diagnostics			
001001 0951-1304	D9.4 WEC diagnostics			
001004 1651		E1 DWP+EFW on		
001004 1728-1802		E2 Booms 1+2: 20-41 m Spin: 14.95-10.81 rpm		
001004 1931-1933		E3 Spin up: 10.81-14.97 rpm		
001004 1945-2020		E4 EFW diagnostics		
001004 2045-2111		E5 WHISPER diagnostics		
001004 2113-2145		E6 STAFF diagnostics		
001005 0113-0423	D11.1 WEC diagnostics	E7.1 WEC diagnostics		
001006 0132-0444	D11.4 WEC diagnostics	E7.4 WEC diagnostics		
001006 0502-0522	D12 WBD BM2 diagnostics	E8 WBD BM2 diagnostics		
001006 1030-1100		E9.1 EFW HBR diagnostics (bad due to wrong SC TM mode)		
001006 1100-1135		E9.2 STAFF HBR diagnostics (bad due to wrong SC TM mode)		
001006 1135-1200		E10 WBD BM2 diagnostics (bad due to wrong WEC clock setting)		
001006 1446	E1 DWP+EFW on			
001006 1509-1746	E2 Booms 1+2: 20-41 m Spin: 15.02-10.84			

	rpm (deployment done in 13 steps)			
001006 1945-1947	E3 Spin up: 10.84-15.01 rpm			
001006 2010-2045	E4 EFW diagnostics			
001006 2100-2126	E5 WHISPER diagnostics (bad due to saturated EFW probes)			
001006 2146-2218	E6 STAFF diagnostics			
001006 2224-2250	E5 WHISPER diagnostics (rerun, bad due to buffer overflow)			
001007 0549	E7.1 WEC diagnostics			
001007 2101-2136		E9.b WHISPER HBR diagn (bad due to WHISPER off)		
001007 2136-2206		E9.c WHISPER HBR diagn (bad due to WHISPER off)		
001008 0839	E7.4 WEC diagnostics			
001008 1209	E8 WBD BM2 diagnostics			
001008 2317	E9.1 EFW HBR diagnostics			
001008 2347	E9.2 STAFF HBR diagnostics			
001009 0008	E10 WBD BM2 diagnostics			
001009 0833-0857			A2 1st WEC on	
001009 0931-0953			A2 redundant i/f	
001009 1015-1053			A4 1st full WEC on	
001009 1056-1243			A3 DWP checkout	

001009 1249			A5 DWP+EFW on	
001009 1300-1325			A6 EFW verif	
001009 1405-1415			A8 EFW verif	
001009 1256-1331	E9.b WHISPER HBR diagn (bad due to WHISPER off)			
001009 1331-1401	E9.c WHISPER HBR diagn (bad due to WHISPER off)			
001009 1906	F1 Full EFW tests	F1 Full EFW tests		
001009 2107	F2 Full WHISPER tests	F2 Full WHISPER tests (bad due to WHISPER off)		
001010 0008	F3 Full STAFF tests	F3 Full STAFF tests		
001010 0108	F4 Full WBD BM2 test	F4 Full WBD BM2 test		
001010 0138	F4 Full WBD BM2 test	F4 Full WBD BM2 test		
001010 0238	F5 Full WEC macro tests (bad due to WHISPER off)	F5 Full WEC macro tests (bad due to WHISPER off)		
001011 0500	F6a Full WEC macro tests (HBR)	F6a Full WEC macro tests (HBR) (bad due to WHISPER off)		
001011 0600	F6b Full WEC macro tests (HBR)	F6b Full WEC macro tests (HBR) (bad due to WHISPER off)		
001011 0730	F7 WEC interference tests (HBR)	F7 WEC interference tests (HBR)		
001011 1100		F8 WEC interference tests (LBR)		
001011 1230		WBD DSN diagnostics		
001011 1629			B1 DWP+EFW on	
001011 1654			B2 Open covers on units 1+2	

001011 1706			B2 Open covers on units 3+4	
001011 1736-1741			B3 Booms 3+4: 0-3 m Spin: 14.96-14.86 rpm	
001011 1759-1820			B3 Booms 3+4: 3-15 m Spin: 14.86-13.24 rpm	
001011 1838-1843			B4 Booms 1+2: 0-3 m Spin: 13.24-13.17 rpm	
001011 1849-1909			B4 Booms 1+2: 3-15 m Spin: 13.17-11.88 rpm	
001011 2059-2101			B5 Spin up: 11.88-21.83 rpm	
001011 2125-2200			B6 EFW diagnostics	
001011 2215			B7a WHISPER diagnostics	
001011 2239-2305			B7b WHISPER diagnostics	
001011 2311-2343			B8 STAFF diagnostics	
001012 0005-0025			B9 WBD BM2 diagnostics	
001012 0227-0537			B10.1 WEC diagnostics	
001012 0627-0700			B10 WBD DSN diagnostics	
001013 0356-0712			B10.4 WEC diagnostics	
001013 0726-0746			B11 WBD BM2 diagnostics	
001016 0200	F8 WEC interference tests (LBR)			
001016 0330	WBD DSN diagnostics			
001016 1622			C1 DWP+EFW on	

001016 1657-1730			C2 Booms 3+4: 15-35 m Spin: 21.82-14.26 rpm	
001016 1752-1800			C3 Booms 1+2: 15-20 m Spin: 14.26-13.53 rpm	
001016 1818-1853			C4 EFW diagnostics	
001016 1925			C5 WHISPER diagnostics	
001016 1958-2030			C6 STAFF diagnostics	
001017 0004-0314			C7.1 WEC diagnostics	
001017 2207-0127			C7.4 WEC diagnostics	
001018 0138-0158			C8 WBD BM2 diagnostics	
001018 0730		E9.1 EFW HBR diagnostics (rerun)		
001018 0755		E9.2 STAFF HBR diagnostics (rerun)		
001018 0820	E9.b WHISPER HBR diagn (rerun)	E9.b WHISPER HBR diagn (rerun)		
001018 0855	E9.c WHISPER HBR diagn (rerun)	E9.c WHISPER HBR diagn (rerun)		
001018 1454			D1 DWP+EFW on	
001018 1529-1521			D0 Spin up: 13.53-17.50 rpm	
001018 1617-1627			D2 Booms 3+4: 35-41 m Spin: 17.50-14.97 rpm	
001018 1650-1725			D4 EFW diagnostics	
001018 1740			D5 WHISPER diagnostics	
001018 1815			D6 STAFF diagnostics	
001019 0333-0643			D7.1 WEC diagnostics	

001019 2200		F2 Full WHISPER tests (rerun) (bad due to DWP SEU?)		
001020 0100	F5 Full WEC macro tests (rerun)	F5 Full WEC macro tests (rerun) (bad due to DWP SEU?)		
001020 0200		F6a Full WEC macro tests (HBR) (rerun) (bad due to DWP SEU?)		
001020 0300		F6a Full WEC macro tests (HBR) (rerun) (bad due to DWP SEU?)		
001020 0713-1033			D7.4 WEC diagnostics	
001020 1043			D8 WBD BM2 diagnostics	
001020 1607	OBDR reboot, all instr off			
001022 1620			D9.1 WEC diagnostics	
001023 1444		EFW reset due to bad sweeps		
001023 1548-1600	WEC restarted in passive mode			
001023 1702-1725				A2 1st WEC on
001023 1753-1814				A2 redundant i/f
001023 1846-1929				A4 1st full WEC on
001023 1932-2119				A3 DWP checkout
001023 2034-2052		WEC restarted in passive mode		
001023 2131				A5 DWP+EFW on
001023 2145-2155				A6 EFW verif
001023 2219-2229				A8 EFW verif

001024 0038			D9.4 WEC diagnostics	
001024 0408			D10 WBD BM2 diagnostics	
001025 1646-1648				B1 DWP+EFW on
001025 1716				B2 Open covers on units 1+2
001025 1726				B2 Open covers on units 3+4
001025 1756-1801				B3 Booms 3+4: 0-3 m Spin: 15.10-15.00 rpm
001025 1811-1833				B3 Booms 3+4: 3-15 m Spin: 15.00-13.36 rpm
001025 1904-1909				B4 Booms 1+2: 0-3 m Spin: 13.36-13.28 rpm
001025 1927-1947				B4 Booms 1+2: 3-15 m Spin: 13.28-11.99 rpm
001025 2025-2100				B6 EFW diagnostics
001025 2113				B7a WHISPER diagnostics
001025 2133				B7b WHISPER diagnostics
001025 2210				B8 STAFF diagnostics
001025 2255-2316				B9 WBD BM2 diagnostics (bad due to TM buffer overflow)
001025 2320-2341				B9 WBD BM2 diagnostics (rerun)
001026 0100-0133				B10 WBD DSN diagnostics (bad due to non-scheduling)
001026 1345-1347				B5 Spin up: 11.99-21.86 rpm
001026 1416-1451				B6 EFW diagnostics
001026 2131-0041			D11.1 WEC diagnostics	
001027 1034-1344				B10.1 WEC diagnostics

001027 1034-1354			D11.4 WEC diagnostics	
001027 1404			D12 WBD BM2 diagnostics	B10 WBD BM2 diagnostics
001028 0959-1319				B10.4 WEC diagnostics
001030 1434-1436				C1 DWP+EFW on
001030 1506-1540				C2 Booms 3+4: 15-35 m Spin: 21.86-14.23 rpm
001030 1608-1616				C3 Booms 1+2: 15-20 m Spin: 14.23-13.50 rpm
001030 1635-1710				C4 EFW diagnostics
001030 1746				C5 WHISPER diagnostics
001030 1820-1852				C6 STAFF diagnostics
001031 0442-0752				C7.1 WEC diagnostics
001031 1452-1535		WEC off during CIS test		
001101 0444-0804				C7.4 WEC diagnostics
001101 0814-0834				C8 WBD BM2 diagnostics
001101 1705-1717	WEC reset			
001102 1615-1616				D0 Spin up: 13.50-17.51 rpm
001102 1627-1629				D1 DWP+EFW on
001102 1650-1700				D2 Booms 3+4: 35-41 m Spin: 17.51-14.95 rpm
001102 1725-1800				D4 EFW diagnostics (partly bad due to VILSPA power outage)
001102 1810-1825				D4 EFW diagnostics (rerun first 15 minutes)

001102 1835-1901				D5 WHISPER diagnostics
001102 1905-1937				D6 STAFF diagnostics
001102 1940-2000				E9 STAFF HBR diagnostics
001104 0800-0830				B10 WBD DSN diagnostics (rerun)
001104 2253-0203				D7.1 WEC diagnostics
001105 2357-0317				D7.4 WEC diagnostics
001106 0328-0348				D8 WBD BM2 diagnostics
001108 1409-1411			E1 DWP+EFW on	
001108 1435-1508			E2 Booms 1+2: 20-41 m Spin: 14.96-10.84 rpm	
001108 1533-1508			E4 EFW diagnostics	
001108 1618			E5 WHISPER diagnostics	
001108 1646			E6 STAFF diagnostics	
001108 1725-1800			E4 EFW diagnostics	
001108 2120-0030			E7.1 WEC diagnostics	
001109 0553			WEC switched off by OBDH	
001109 1151-1511			E7.4 WEC diagnostics (not run due to OBDH switch-off)	
001109 1313-1337		WEC off-on due to DWP problems		
001109 1521-1541			E8 WBD BM2 diagnostics (not run due to OBDH switch-off)	
001109 1552		DWP problems start		

001109 1709-2019				D9.1 WEC diagnostics
001109 ca 2000			E3 Spin up: 10.84- ca 15 rpm (not run due to OBDH problems)	
001110 0000			E9.1 EFW HBR diagnostics (not run due to OBDH switch-off)	
001110 0030			E9.2 STAFF HBR diagnostics (not run due to OBDH switch-off)	
001110 0100			E10 WBD HBR diagnostics (not run due to OBDH switch-off)	
001110 0120			E9.b WHISPER HBR diagnostics (not run due to OBDH switch-off)	
001110 0155			E9.c WHISPER HBR diagnostics (not run due to OBDH switch-off)	
001110 1306			WEC switched on	
001110 1712-2032				D9.4 WEC diagnostics
001110 2042-2102				D10 WBD BM2 diagnostics
001111 0400			E9.1 EFW HBR diagnostics	
001111 0430			E9.2 STAFF HBR diagnostics	
001111 0500			E10 WBD HBR diagnostics	
001111 0520			E9.b WHISPER HBR diagnostics	
001111 0555			E9.c WHISPER HBR diagnostics	
001111 1204		DWP reset		
001111 1350-1359	WEC off-on due to DWP problem?			
001111 2000-2002			E3 Spin up: 10.84-14.99 rpm	
001113 1200-1510				D11.1 WEC diagnostics

001114 0318-0338				D12 WBD BM2 diagnostics
001114 0340-0700				D11.4 WEC diagnostics
001114 2300-2335	B6X EFW diagnostics	B6X EFW diagnostics		
001115 1900-2130		WBD multi sc ops (failed due to ??)	WBD multi sc ops (failed due to ??)	
001116 0220			F1 Full EFW tests (bad due to wrong CAB?)	
001116 0420			F2 Full WHISPER tests (bad due to wrong CAB?)	
001116 0720			F3 Full STAFF tests (bad due to wrong CAB?)	
001116 0820			F4 Full WBD BM2 tests	
001116 0920			F5 Full WEC macro tests	
001116 1420-1422				E1 DWP+EFW on
001116 1450-1525				E2 Booms 1+2: 20-41 m Spin: 14.94-10.83 rpm
001116 1612-1647				E4 EFW diagnostics
001116 1703-1729				E5 WHISPER diagnostics
001116 1800-1802				E3 Spin up: 10.83-14.98 rpm
001116 1815				E6 STAFF diagnostics
001116 2000			F6a Full WEC macro tests (HBR)	
001116 2023-2333				E7.1 WEC diagnostics
001116 2100			F6b Full WEC macro tests (HBR)	
001116 2230			F7 WEC interference tests (HBR)	
001117 0725		WEC switched off by OBDH		

001117 2027-2347				E7.4 WEC diagnostics (bad from 2130 due to ?)
001117 2357-0017				E8 WBD BM2 diagnostics (bad from 00:13 due to ?)
001118 2218-2324		WEC switched on		
001119 0507			F8 WEC interference tests (LBR)	
001120 1400-1500		WBD multi sc ops (failed due to wrong config tables)	WBD multi sc ops (failed due to wrong SC antenna)	WBD multi sc ops (failed due to wrong config tables)
001120 1638-1643			EFW Orbit Sequencer test started	
001121 2245				E9.1 EFW HBR diagnostics
001121 2315				E9.2 STAFF HBR diagnostics
001121 2345				E10 WBD HBR diagnostics
001122 0006				E9.b WHISPER HBR diagnostics
001122 0041				E9.c WHISPER HBR diagnostics
001124 2139				F1 Full EFW tests
001124 2339				F2 Full WHISPER tests
001125 0240				F3 Full STAFF tests
001125 0340				F4 Full WBD BM2 tests
001125 0440				F5 Full WEC macro tests
001126 0100	DWP + EFW reset	DWP + EFW reset	DWP + EFW reset	DWP + EFW reset
001127 1249-1349	WBD multi sc ops (OK)	WBD multi sc ops (OK)	WBD multi sc ops (partly OK)	WBD multi sc ops (failed due to low antenna slew rate)
001127 1800				F6a Full WEC macro tests (HBR)
001127 1900				F6b Full WEC macro tests (HBR)
001127 2030				F7 WEC interference tests (HBR)

001128 0516				WBD DSN diagnostics ??
001128 0546				F8 WEC interference tests (LBR)
001130 0300			F1 Full EFW tests (rerun)	
001130 0500			F2 Full WHISPER tests (rerun)	
001130 0800			F3 Full STAFF tests (rerun)	
001201 0600-0920				E7.4 WEC diagnostics (rerun)
001201 0930-0950				E8 WBD BM2 diagnostics (rerun)
001204 1616-1716	WBD multi sc ops?	WBD multi sc ops?	WBD multi sc ops?	

[Back to WEC home page.](#)

Last updated 2000-11-29 by [Per-Arne Lindqvist](#)