

## Supplementary materials for Chapter 4

### *Anomalous wave activity events*

Following is a list of all the anomalous events in the Euro-Atlantic (between  $60^{\circ}W$  to  $60^{\circ}E$ ) and North Pacific sectors (between  $120^{\circ}E$  to  $120^{\circ}W$ ) found in the latitude band  $45N - 60N$ .

Table 1: NA anomalous events with 3-7 days persistence

Peak date	Persistence [days]	Location
1979-Dec-21	3	1.5 W, 52.5 N
1979-Dec-29	3	58.5 W, 54.0 N
1980-Jan-8	4	22.5 W, 57.0 N
1980-Jan-18	4	4.5 E, 52.5 N
1980-Jan-24	6	45.0 W, 55.5 N
1980-Feb-22	5	13.5 E, 54.0 N
1980-Dec-3	4	33.0 W, 52.5 N
1981-Jan-22	4	3.0 W, 45.0 N
1981-Jan-22	3	0.0 E, 46.5 N
1981-Jan-30	7	3.0 E, 48.0 N
1981-Feb-16	5	7.5 E, 54.0 N
1981-Feb-26	3	4.5 E, 55.5 N
1981-Dec-1	3	19.5 W, 49.5 N
1981-Dec-5	3	37.5 W, 48.0 N
1981-Dec-27	3	54.0 E, 51.0 N
1981-Dec-28	5	31.5 W, 57.0 N
1982-Jan-16	7	9.0 E, 51.0 N
1982-Feb-3	3	7.5 E, 52.5 N
1982-Feb-14	4	27.0 E, 51.0 N
1982-Feb-16	3	4.5 W, 52.5 N
1982-Feb-26	3	57.0 W, 57.0 N
1982-Nov-27	4	40.5 E, 48.0 N
1982-Dec-3	6	15.0 E, 52.5 N

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**Table 1 – continued from previous page (NA 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1982-Dec-23	3	58.5 E, 49.5 N
1982-Dec-24	3	1.5 E, 46.5 N
1982-Dec-31	3	18.0 E, 57.0 N
1983-Jan-23	6	7.5 E, 51.0 N
1983-Feb-7	5	22.5 W, 52.5 N
1983-Feb-23	3	18.0 E, 55.5 N
1983-Dec-3	4	4.5 E, 49.5 N
1983-Dec-18	3	3.0 W, 57.0 N
1984-Jan-30	5	3.0 W, 57.0 N
1984-Feb-13	4	21.0 E, 52.5 N
1984-Feb-20	3	19.5 E, 57.0 N
1984-Feb-26	4	6.0 E, 52.5 N
1984-Dec-2	3	28.5 E, 54.0 N
1984-Dec-16	3	15.0 E, 58.5 N
1984-Dec-28	5	3.0 W, 54.0 N
1985-Jan-15	6	4.5 W, 54.0 N
1985-Feb-3	5	7.5 W, 46.5 N
1985-Feb-8	4	43.5 W, 55.5 N
1985-Feb-15	3	15.0 W, 54.0 N
1985-Feb-27	3	37.5 E, 52.5 N
1985-Feb-28	3	7.5 W, 58.5 N
1985-Dec-6	6	46.5 W, 55.5 N
1985-Dec-30	3	7.5 W, 54.0 N
1986-Jan-5	3	19.5 W, 58.5 N
1986-Jan-18	3	3.0 W, 46.5 N
1986-Feb-2	3	7.5 W, 52.5 N
1986-Feb-9	4	48.0 W, 57.0 N
1986-Feb-13	3	3.0 E, 55.5 N
1986-Feb-20	7	37.5 W, 58.5 N
1986-Dec-30	3	40.5 W, 58.5 N

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**Table 1 – continued from previous page (NA 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1987-Feb-13	3	58.5 W, 57.0 N
1987-Feb-20	3	12.0 W, 51.0 N
1987-Nov-23	3	34.5 W, 51.0 N
1987-Dec-1	3	15.0 W, 54.0 N
1987-Dec-10	3	16.5 W, 54.0 N
1987-Dec-23	6	1.5 E, 49.5 N
1987-Dec-26	3	42.0 W, 55.5 N
1987-Dec-29	5	3.0 E, 45.0 N
1988-Jan-24	4	46.5 E, 57.0 N
1988-Jan-30	3	15.0 W, 54.0 N
1988-Feb-12	4	57.0 E, 52.5 N
1988-Feb-14	3	6.0 E, 51.0 N
1988-Feb-28	4	25.5 W, 48.0 N
1988-Nov-27	3	45.0 W, 58.5 N
1988-Dec-13	3	13.5 W, 51.0 N
1989-Jan-7	3	12.0 W, 46.5 N
1989-Jan-26	6	12.0 E, 51.0 N
1989-Feb-8	3	9.0 E, 45.0 N
1989-Nov-25	5	42.0 W, 57.0 N
1989-Dec-5	4	27.0 W, 54.0 N
1989-Dec-11	4	48.0 W, 58.5 N
1989-Dec-28	3	6.0 E, 51.0 N
1990-Jan-2	4	15.0 W, 55.5 N
1990-Jan-22	3	12.0 E, 54.0 N
1990-Feb-2	3	24.0 E, 57.0 N
1990-Feb-6	3	22.5 E, 52.5 N
1990-Feb-23	5	19.5 E, 45.0 N
1990-Nov-29	3	19.5 W, 55.5 N
1990-Dec-15	6	7.5 W, 54.0 N
1990-Dec-19	3	52.5 E, 55.5 N
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**Table 1 – continued from previous page (NA 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1990-Dec-31	3	4.5 E, 58.5 N
1990-Dec-31	4	7.5 E, 54.0 N
1991-Jan-17	6	7.5 E, 52.5 N
1991-Jan-25	4	6.0 W, 51.0 N
1991-Feb-3	5	4.5 E, 55.5 N
1991-Feb-14	3	28.5 W, 54.0 N
1991-Nov-24	5	7.5 E, 49.5 N
1991-Dec-10	4	12.0 E, 54.0 N
1992-Jan-12	7	12.0 W, 48.0 N
1992-Jan-19	6	16.5 W, 55.5 N
1992-Jan-30	3	9.0 E, 52.5 N
1992-Feb-5	4	12.0 W, 45.0 N
1992-Feb-8	3	15.0 E, 51.0 N
1992-Dec-29	5	6.0 E, 55.5 N
1993-Jan-4	6	13.5 E, 48.0 N
1993-Jan-13	3	39.0 W, 58.5 N
1993-Feb-8	6	4.5 W, 49.5 N
1993-Feb-17	3	16.5 W, 45.0 N
1993-Feb-21	5	10.5 W, 51.0 N
1993-Nov-24	4	51.0 E, 57.0 N
1993-Nov-29	5	3.0 E, 55.5 N
1993-Dec-30	4	51.0 W, 58.5 N
1994-Jan-23	6	0.0 E, 45.0 N
1994-Feb-4	3	9.0 W, 57.0 N
1994-Feb-13	6	1.5 W, 55.5 N
1994-Feb-20	4	1.5 E, 57.0 N
1994-Feb-22	5	40.5 W, 57.0 N
1994-Dec-24	4	1.5 E, 49.5 N
1995-Jan-4	4	7.5 E, 54.0 N
1995-Jan-19	7	33.0 E, 52.5 N

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**Table 1 – continued from previous page (NA 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1995-Jan-25	4	60.0 E, 54.0 N
1995-Dec-6	5	18.0 E, 55.5 N
1995-Dec-11	3	3.0 E, 52.5 N
1995-Dec-15	4	12.0 W, 54.0 N
1996-Jan-1	5	51.0 W, 57.0 N
1996-Jan-11	3	16.5 E, 52.5 N
1996-Jan-19	3	13.5 E, 57.0 N
1996-Jan-25	4	12.0 E, 57.0 N
1996-Feb-24	3	12.0 E, 58.5 N
1996-Mar-3	6	16.5 W, 52.5 N
1996-Nov-22	3	57.0 E, 51.0 N
1996-Dec-8	3	1.5 E, 49.5 N
1996-Dec-12	4	43.5 W, 51.0 N
1996-Dec-19	4	27.0 W, 55.5 N
1996-Dec-24	3	9.0 W, 55.5 N
1997-Jan-15	5	6.0 E, 46.5 N
1997-Jan-20	3	16.5 W, 48.0 N
1997-Jan-25	3	13.5 E, 55.5 N
1997-Nov-29	6	45.0 W, 58.5 N
1997-Dec-18	6	4.5 W, 55.5 N
1998-Jan-2	3	13.5 W, 54.0 N
1998-Jan-13	3	12.0 E, 51.0 N
1998-Jan-16	3	48.0 W, 58.5 N
1998-Jan-28	3	28.5 W, 54.0 N
1998-Feb-13	6	3.0 E, 45.0 N
1998-Nov-24	6	16.5 E, 54.0 N
1998-Dec-1	3	3.0 E, 52.5 N
1998-Dec-4	3	48.0 W, 58.5 N
1998-Dec-9	3	13.5 E, 55.5 N
1999-Feb-1	7	1.5 W, 49.5 N
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**Table 1 – continued from previous page (NA 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1999-Feb-9	4	37.5 W, 55.5 N
1999-Feb-12	3	6.0 E, 54.0 N
1999-Dec-17	3	0.0 E, 46.5 N
1999-Dec-24	3	18.0 E, 55.5 N
1999-Dec-29	3	7.5 E, 57.0 N
2000-Jan-16	6	19.5 W, 49.5 N
2000-Feb-29	3	33.0 E, 46.5 N
2000-Dec-5	4	13.5 E, 54.0 N
2000-Dec-22	3	39.0 W, 55.5 N
2000-Dec-26	4	52.5 W, 57.0 N
2001-Jan-14	7	0.0 E, 52.5 N
2001-Jan-23	3	15.0 W, 57.0 N
2001-Jan-26	3	3.0 E, 57.0 N
2001-Feb-15	6	6.0 E, 51.0 N
2001-Feb-26	3	45.0 W, 48.0 N
2001-Mar-1	3	0.0 E, 55.5 N
2001-Dec-4	3	24.0 E, 58.5 N
2001-Dec-22	7	40.5 W, 52.5 N
2002-Feb-3	3	19.5 E, 48.0 N
2002-Dec-25	4	6.0 E, 58.5 N
2002-Dec-27	3	34.5 W, 57.0 N
2003-Jan-7	7	21.0 W, 55.5 N
2003-Jan-14	4	3.0 W, 46.5 N
2003-Feb-8	6	4.5 E, 51.0 N
2003-Feb-28	3	21.0 W, 57.0 N
2003-Dec-4	3	15.0 W, 48.0 N
2003-Dec-8	4	0.0 E, 52.5 N
2004-Jan-2	3	13.5 E, 57.0 N
2004-Jan-9	3	60.0 W, 57.0 N
2004-Jan-9	3	10.5 E, 58.5 N

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**Table 1 – continued from previous page (NA 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
2004-Jan-19	4	15.0 W, 48.0 N
2004-Jan-27	4	45.0 W, 55.5 N
2004-Feb-13	6	3.0 W, 51.0 N
2004-Feb-26	4	40.5 W, 52.5 N
2004-Mar-1	3	3.0 W, 52.5 N
2004-Dec-9	3	4.5 E, 52.5 N
2004-Dec-31	3	10.5 E, 46.5 N
2005-Feb-3	3	58.5 E, 52.5 N
2005-Feb-10	3	40.5 E, 51.0 N
2005-Feb-15	4	15.0 W, 49.5 N
2005-Nov-22	3	7.5 E, 51.0 N
2005-Nov-25	3	43.5 W, 52.5 N
2005-Dec-6	3	4.5 E, 58.5 N
2005-Dec-10	3	3.0 W, 49.5 N
2005-Dec-15	4	27.0 W, 46.5 N
2005-Dec-28	3	0.0 E, 55.5 N
2006-Jan-8	6	9.0 E, 52.5 N
2006-Jan-14	5	16.5 E, 52.5 N
2006-Feb-17	3	46.5 E, 54.0 N
2006-Feb-22	5	6.0 W, 54.0 N
2006-Dec-22	7	3.0 E, 52.5 N
2007-Jan-25	7	27.0 W, 52.5 N
2007-Feb-18	4	6.0 W, 54.0 N
2007-Feb-24	3	57.0 W, 57.0 N
2008-Jan-2	4	18.0 E, 57.0 N
2008-Jan-7	3	6.0 E, 46.5 N
2008-Jan-8	6	52.5 E, 57.0 N
2008-Jan-28	3	12.0 E, 49.5 N
2008-Feb-10	6	10.5 E, 52.5 N
2008-Feb-22	4	4.5 W, 48.0 N
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**Table 1 – continued from previous page (NA 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
2008-Nov-29	3	43.5 W, 46.5 N
2008-Dec-15	3	21.0 E, 55.5 N
2008-Dec-25	4	4.5 E, 52.5 N
2009-Jan-4	4	54.0 W, 57.0 N
2009-Jan-8	3	7.5 W, 51.0 N
2009-Jan-24	3	51.0 E, 48.0 N
2009-Feb-3	3	33.0 W, 55.5 N
2009-Feb-16	3	54.0 E, 49.5 N
2009-Feb-17	4	6.0 W, 51.0 N
2009-Feb-22	5	10.5 W, 46.5 N
2009-Dec-10	3	12.0 E, 58.5 N
2009-Dec-15	4	25.5 W, 55.5 N
2009-Dec-21	4	57.0 W, 54.0 N
2010-Jan-11	7	13.5 W, 55.5 N
2010-Feb-5	3	46.5 E, 52.5 N
2010-Feb-20	3	52.5 W, 52.5 N
2010-Dec-9	4	28.5 W, 49.5 N
2010-Dec-12	3	27.0 W, 57.0 N
2011-Jan-3	7	55.5 W, 55.5 N
2011-Feb-13	5	25.5 W, 58.5 N
2011-Feb-18	3	36.0 W, 57.0 N
2011-Feb-24	3	3.0 E, 52.5 N
2011-Dec-15	3	15.0 W, 58.5 N
2011-Dec-27	3	7.5 E, 46.5 N
2012-Jan-15	4	9.0 E, 55.5 N
2012-Jan-25	4	51.0 E, 55.5 N
2012-Jan-26	3	10.5 E, 57.0 N
2012-Feb-1	3	6.0 E, 57.0 N
2012-Feb-7	5	1.5 E, 54.0 N
2012-Feb-8	3	12.0 E, 54.0 N

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**Table 1 – continued from previous page (NA 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
2012-Feb-14	3	21.0 W, 49.5 N
2012-Feb-19	3	49.5 E, 52.5 N
2012-Feb-29	5	4.5 E, 48.0 N
2012-Dec-13	5	31.5 W, 58.5 N
2012-Dec-21	4	4.5 W, 54.0 N
2013-Jan-5	6	1.5 W, 52.5 N
2013-Jan-10	5	6.0 W, 57.0 N
2013-Jan-16	3	4.5 W, 55.5 N
2013-Feb-10	3	9.0 W, 58.5 N
2013-Feb-25	7	6.0 W, 49.5 N
2013-Dec-11	3	13.5 E, 49.5 N
2013-Dec-27	3	54.0 E, 49.5 N
2014-Jan-11	4	15.0 W, 58.5 N
2014-Jan-21	5	6.0 E, 57.0 N
2014-Jan-26	3	9.0 E, 58.5 N
2014-Feb-4	3	10.5 E, 54.0 N
2014-Feb-11	3	37.5 W, 60.0 N
2014-Feb-25	3	25.5 E, 54.0 N
2014-Nov-30	3	3.0 W, 52.5 N
2014-Dec-30	5	1.5 E, 51.0 N
2015-Feb-5	4	15.0 W, 52.5 N
2015-Feb-9	5	1.5 W, 49.5 N
2015-Feb-12	3	22.5 E, 48.0 N
2015-Feb-25	4	54.0 E, 48.0 N
2016-Jan-1	7	28.5 E, 57.0 N
2016-Jan-19	6	42.0 W, 54.0 N
2016-Jan-24	3	1.5 E, 52.5 N
2016-Feb-21	3	55.5 E, 57.0 N
2016-Nov-24	3	57.0 E, 49.5 N
2016-Nov-26	6	12.0 W, 51.0 N
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**Table 1 – continued from previous page (NA 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
2016-Dec-8	3	1.5 E, 45.0 N
2016-Dec-11	3	43.5 W, 58.5 N
2016-Dec-15	4	0.0 E, 55.5 N
2016-Dec-21	4	25.5 E, 55.5 N
2016-Dec-29	3	10.5 E, 49.5 N
2017-Jan-3	4	22.5 W, 49.5 N
2017-Jan-10	4	19.5 E, 52.5 N
2017-Jan-19	7	3.0 E, 51.0 N
2017-Jan-28	3	25.5 E, 52.5 N
2017-Feb-6	6	3.0 E, 58.5 N
2017-Feb-14	3	12.0 E, 52.5 N
2017-Dec-23	3	3.0 E, 46.5 N
2018-Jan-12	6	18.0 E, 55.5 N
2018-Jan-15	3	48.0 E, 57.0 N
2018-Jan-29	6	10.5 W, 46.5 N
2018-Feb-13	4	3.0 E, 55.5 N

Table 2: NP anomalous events with 3-7 days persistence

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1979-Dec-13	3	175.5 E, 52.5 N
1980-Jan-6	3	135.0 E, 58.5 N
1980-Jan-10	5	165.0 E, 51.0 N
1980-Jan-15	5	138.0 E, 55.5 N
1980-Jan-26	3	153.0 W, 51.0 N
1980-Jan-29	6	178.5 E, 49.5 N
1980-Feb-13	7	171.0 W, 52.5 N
1980-Feb-20	3	177.0 E, 51.0 N
1980-Dec-7	3	133.5 E, 55.5 N
1980-Dec-13	3	130.5 E, 52.5 N

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**Table 2 – continued from previous page (NP 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1980-Dec-23	3	174.0 E, 51.0 N
1980-Dec-28	5	138.0 E, 48.0 N
1981-Jan-3	3	132.0 E, 48.0 N
1981-Jan-12	3	145.5 E, 49.5 N
1981-Jan-22	4	124.5 W, 46.5 N
1981-Jan-28	4	160.5 E, 48.0 N
1981-Feb-2	3	172.5 E, 49.5 N
1981-Feb-26	4	135.0 E, 52.5 N
1981-Feb-27	4	132.0 W, 51.0 N
1981-Mar-1	3	160.5 E, 52.5 N
1981-Dec-3	3	139.5 W, 54.0 N
1982-Jan-13	3	132.0 E, 54.0 N
1982-Jan-29	3	139.5 E, 52.5 N
1982-Feb-5	7	147.0 W, 49.5 N
1982-Feb-11	6	169.5 E, 51.0 N
1983-Jan-4	4	166.5 E, 49.5 N
1983-Jan-16	3	168.0 E, 49.5 N
1983-Jan-21	3	156.0 W, 51.0 N
1983-Jan-25	3	159.0 W, 54.0 N
1983-Feb-10	5	133.5 E, 55.5 N
1983-Feb-19	4	126.0 E, 51.0 N
1983-Dec-7	3	154.5 W, 54.0 N
1983-Dec-22	7	141.0 W, 54.0 N
1984-Jan-14	4	138.0 W, 51.0 N
1984-Jan-19	6	153.0 E, 54.0 N
1984-Jan-25	6	129.0 E, 52.5 N
1984-Feb-7	5	147.0 E, 52.5 N
1984-Feb-8	4	148.5 E, 52.5 N
1984-Feb-29	5	147.0 E, 49.5 N
1984-Dec-16	3	157.5 W, 48.0 N

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**Table 2 – continued from previous page (NP 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1984-Dec-22	3	154.5 W, 48.0 N
1984-Dec-24	6	129.0 E, 55.5 N
1984-Dec-29	5	162.0 E, 55.5 N
1985-Jan-7	4	162.0 E, 52.5 N
1985-Jan-15	4	148.5 E, 54.0 N
1985-Jan-20	3	169.5 W, 51.0 N
1985-Jan-23	3	130.5 W, 46.5 N
1985-Jan-24	3	133.5 E, 58.5 N
1985-Jan-28	3	127.5 E, 54.0 N
1985-Feb-10	3	171.0 E, 54.0 N
1985-Nov-23	4	166.5 W, 55.5 N
1985-Dec-6	7	120.0 E, 57.0 N
1985-Dec-11	3	136.5 W, 49.5 N
1985-Dec-13	3	172.5 W, 55.5 N
1985-Dec-14	7	138.0 E, 55.5 N
1985-Dec-19	4	130.5 W, 46.5 N
1985-Dec-27	3	166.5 W, 52.5 N
1986-Jan-1	3	174.0 E, 58.5 N
1986-Jan-17	3	151.5 W, 51.0 N
1986-Feb-2	4	141.0 E, 54.0 N
1986-Feb-7	4	154.5 W, 51.0 N
1986-Feb-15	3	169.5 W, 54.0 N
1986-Feb-19	5	163.5 E, 52.5 N
1986-Feb-28	3	121.5 E, 46.5 N
1986-Nov-23	4	169.5 E, 54.0 N
1987-Jan-25	3	148.5 W, 51.0 N
1987-Jan-29	3	172.5 E, 54.0 N
1987-Feb-15	3	145.5 E, 57.0 N
1987-Dec-3	4	144.0 W, 55.5 N
1988-Jan-8	4	160.5 W, 57.0 N

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**Table 2 – continued from previous page (NP 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1988-Feb-4	6	174.0 W, 55.5 N
1988-Feb-16	3	156.0 E, 48.0 N
1988-Mar-1	3	175.5 E, 52.5 N
1988-Nov-26	3	135.0 E, 48.0 N
1988-Dec-15	4	127.5 E, 55.5 N
1988-Dec-16	3	127.5 W, 45.0 N
1989-Jan-30	3	166.5 E, 49.5 N
1989-Feb-4	4	135.0 W, 54.0 N
1989-Feb-14	4	177.0 W, 51.0 N
1989-Feb-19	3	147.0 W, 55.5 N
1989-Nov-25	4	157.5 E, 58.5 N
1989-Nov-29	3	132.0 E, 49.5 N
1989-Dec-20	3	168.0 E, 52.5 N
1990-Jan-22	5	145.5 E, 57.0 N
1990-Feb-25	3	162.0 W, 48.0 N
1991-Jan-4	4	133.5 E, 54.0 N
1991-Jan-5	3	157.5 W, 55.5 N
1991-Jan-9	3	156.0 E, 52.5 N
1991-Jan-16	3	169.5 E, 46.5 N
1991-Jan-27	3	153.0 W, 48.0 N
1991-Jan-31	4	172.5 E, 48.0 N
1991-Feb-6	3	162.0 E, 45.0 N
1991-Feb-14	3	162.0 E, 49.5 N
1991-Feb-22	5	136.5 E, 52.5 N
1991-Feb-28	5	159.0 W, 49.5 N
1991-Dec-11	3	132.0 E, 58.5 N
1992-Jan-12	3	178.5 W, 51.0 N
1992-Jan-16	3	178.5 W, 54.0 N
1992-Jan-27	4	175.5 E, 52.5 N
1992-Dec-30	3	123.0 W, 57.0 N
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**Table 2 – continued from previous page (NP 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1993-Jan-7	4	148.5 W, 46.5 N
1993-Feb-12	3	172.5 W, 55.5 N
1994-Jan-7	3	165.0 E, 57.0 N
1994-Jan-16	3	165.0 E, 55.5 N
1994-Jan-19	3	150.0 E, 58.5 N
1994-Jan-22	4	144.0 W, 51.0 N
1994-Jan-30	4	142.5 W, 49.5 N
1994-Feb-4	3	141.0 W, 52.5 N
1994-Feb-21	3	178.5 W, 52.5 N
1994-Dec-4	3	142.5 E, 52.5 N
1994-Dec-14	4	127.5 E, 58.5 N
1995-Jan-2	3	139.5 W, 54.0 N
1995-Jan-6	3	147.0 W, 54.0 N
1995-Jan-11	3	145.5 E, 55.5 N
1995-Jan-15	4	147.0 E, 49.5 N
1995-Jan-18	3	150.0 W, 54.0 N
1995-Jan-22	3	127.5 W, 49.5 N
1995-Jan-28	3	130.5 E, 52.5 N
1995-Feb-14	3	172.5 E, 54.0 N
1995-Nov-22	3	154.5 W, 52.5 N
1995-Nov-26	6	175.5 W, 51.0 N
1995-Dec-25	3	123.0 W, 46.5 N
1995-Dec-30	3	171.0 W, 52.5 N
1996-Jan-11	5	156.0 E, 51.0 N
1996-Jan-21	5	142.5 E, 58.5 N
1996-Feb-2	3	168.0 E, 51.0 N
1996-Feb-14	5	135.0 W, 45.0 N
1996-Feb-29	3	141.0 W, 49.5 N
1996-Nov-29	4	127.5 E, 52.5 N
1996-Dec-18	3	130.5 E, 57.0 N

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**Table 2 – continued from previous page (NP 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1996-Dec-19	3	177.0 W, 46.5 N
1997-Jan-6	3	126.0 E, 49.5 N
1997-Jan-13	4	127.5 W, 49.5 N
1997-Jan-27	4	165.0 E, 51.0 N
1997-Feb-23	3	129.0 W, 48.0 N
1997-Dec-3	3	124.5 W, 51.0 N
1998-Jan-9	5	169.5 E, 55.5 N
1998-Jan-21	3	145.5 E, 52.5 N
1998-Feb-6	4	148.5 W, 49.5 N
1998-Dec-2	3	135.0 E, 60.0 N
1998-Dec-25	6	177.0 W, 55.5 N
1999-Jan-9	5	150.0 E, 55.5 N
1999-Jan-28	4	127.5 E, 57.0 N
1999-Dec-14	5	151.5 E, 54.0 N
1999-Dec-19	4	132.0 E, 51.0 N
1999-Dec-27	3	127.5 W, 45.0 N
2000-Feb-3	4	138.0 W, 49.5 N
2000-Feb-12	3	147.0 W, 51.0 N
2000-Dec-4	3	133.5 E, 57.0 N
2000-Dec-10	3	154.5 E, 58.5 N
2000-Dec-14	5	174.0 W, 57.0 N
2000-Dec-18	3	154.5 E, 60.0 N
2000-Dec-24	4	129.0 E, 57.0 N
2001-Jan-3	3	138.0 E, 51.0 N
2001-Jan-6	3	165.0 E, 46.5 N
2001-Feb-20	3	160.5 E, 57.0 N
2001-Nov-25	3	168.0 W, 55.5 N
2001-Nov-30	4	177.0 W, 55.5 N
2001-Dec-8	3	142.5 E, 55.5 N
2001-Dec-11	3	154.5 E, 48.0 N
Continued on next page		

**Table 2 – continued from previous page (NP 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
2001-Dec-18	5	159.0 E, 52.5 N
2002-Feb-13	6	147.0 E, 51.0 N
2002-Feb-15	3	124.5 W, 45.0 N
2002-Nov-29	3	133.5 W, 48.0 N
2002-Dec-9	6	135.0 E, 58.5 N
2002-Dec-23	4	169.5 W, 55.5 N
2003-Jan-12	4	148.5 W, 52.5 N
2003-Jan-18	3	162.0 W, 49.5 N
2003-Feb-22	3	151.5 E, 51.0 N
2004-Jan-8	4	166.5 E, 57.0 N
2004-Jan-26	3	171.0 E, 54.0 N
2004-Feb-8	3	175.5 E, 51.0 N
2005-Jan-7	3	162.0 W, 51.0 N
2005-Jan-11	6	145.5 E, 51.0 N
2005-Jan-27	5	159.0 E, 57.0 N
2005-Feb-2	7	142.5 E, 51.0 N
2005-Nov-25	6	123.0 W, 52.5 N
2005-Dec-4	4	126.0 E, 54.0 N
2005-Dec-16	7	144.0 E, 52.5 N
2005-Dec-17	3	127.5 W, 51.0 N
2005-Dec-22	3	133.5 E, 51.0 N
2006-Jan-28	4	156.0 E, 48.0 N
2006-Feb-2	4	126.0 E, 58.5 N
2006-Feb-11	3	133.5 W, 51.0 N
2006-Feb-16	3	127.5 W, 57.0 N
2007-Jan-30	3	151.5 W, 48.0 N
2007-Feb-3	4	145.5 W, 49.5 N
2007-Feb-5	3	169.5 W, 54.0 N
2007-Dec-1	7	153.0 W, 58.5 N
2008-Feb-16	4	157.5 E, 49.5 N

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**Table 2 – continued from previous page (NP 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
2008-Feb-20	3	136.5 W, 52.5 N
2008-Feb-29	4	168.0 E, 55.5 N
2008-Dec-28	4	156.0 E, 52.5 N
2009-Jan-1	3	150.0 E, 48.0 N
2009-Jan-7	3	124.5 E, 58.5 N
2009-Jan-16	3	141.0 W, 48.0 N
2009-Jan-19	3	124.5 W, 46.5 N
2009-Jan-25	5	136.5 E, 57.0 N
2009-Jan-26	4	138.0 E, 58.5 N
2009-Dec-6	3	153.0 W, 52.5 N
2009-Dec-10	5	153.0 W, 54.0 N
2009-Dec-28	5	124.5 E, 55.5 N
2010-Jan-3	4	144.0 E, 51.0 N
2010-Jan-12	3	171.0 W, 49.5 N
2010-Jan-15	4	142.5 E, 52.5 N
2010-Jan-21	3	136.5 W, 48.0 N
2010-Feb-3	6	132.0 E, 58.5 N
2010-Feb-20	5	135.0 W, 49.5 N
2010-Nov-22	3	154.5 W, 51.0 N
2010-Dec-6	3	150.0 W, 51.0 N
2010-Dec-15	5	126.0 E, 55.5 N
2011-Jan-7	3	145.5 E, 54.0 N
2011-Jan-29	3	150.0 W, 54.0 N
2011-Mar-1	5	175.5 W, 52.5 N
2011-Dec-25	3	141.0 E, 49.5 N
2012-Jan-26	7	129.0 E, 54.0 N
2012-Feb-3	3	126.0 W, 49.5 N
2012-Feb-6	3	144.0 W, 51.0 N
2012-Feb-12	3	162.0 E, 54.0 N
2012-Dec-8	7	132.0 E, 54.0 N

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**Table 2 – continued from previous page (NP 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
2012-Dec-26	3	147.0 E, 57.0 N
2012-Dec-31	4	121.5 E, 57.0 N
2013-Jan-12	3	172.5 E, 46.5 N
2013-Dec-7	4	154.5 W, 51.0 N
2013-Dec-13	5	136.5 E, 54.0 N
2013-Dec-18	5	121.5 E, 52.5 N
2014-Jan-12	6	147.0 E, 55.5 N
2014-Jan-24	4	159.0 W, 49.5 N
2014-Feb-7	4	168.0 E, 54.0 N
2014-Feb-19	5	154.5 E, 54.0 N
2014-Feb-24	4	159.0 W, 54.0 N
2014-Dec-4	6	135.0 E, 57.0 N
2014-Dec-13	3	136.5 E, 51.0 N
2015-Jan-12	6	168.0 E, 49.5 N
2015-Jan-30	3	172.5 W, 49.5 N
2015-Feb-5	4	177.0 W, 48.0 N
2015-Feb-15	3	156.0 E, 46.5 N
2015-Nov-28	5	120.0 W, 48.0 N
2016-Jan-5	4	142.5 W, 52.5 N
2016-Jan-11	6	169.5 E, 57.0 N
2016-Jan-15	3	162.0 W, 52.5 N
2016-Feb-2	3	168.0 W, 55.5 N
2016-Feb-28	4	165.0 W, 52.5 N
2017-Jan-3	3	141.0 W, 51.0 N
2017-Jan-8	4	169.5 W, 52.5 N
2017-Jan-14	6	142.5 E, 51.0 N
2017-Jan-23	3	130.5 W, 48.0 N
2017-Feb-5	3	177.0 E, 52.5 N
2017-Feb-12	4	154.5 E, 49.5 N
2017-Dec-28	5	153.0 E, 52.5 N

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**Table 2 – continued from previous page (NP 3-7 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
2018-Jan-6	3	163.5 W, 54.0 N
2018-Jan-14	5	157.5 W, 52.5 N
2018-Jan-15	3	138.0 W, 52.5 N
2018-Jan-24	4	135.0 E, 55.5 N
2018-Feb-20	4	156.0 W, 52.5 N
2018-Feb-25	4	145.5 E, 57.0 N

**Table 3: NA anomalous events with 8-16 days persistence**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1983-Feb-15	8	7.5 W, 52.5 N
1985-Jan-5	9	28.5 W, 57.0 N
1987-Jan-13	13	1.5 E, 57.0 N
1987-Jan-26	10	28.5 W, 54.0 N
1989-Jan-1	8	6.0 E, 51.0 N
1991-Dec-7	8	7.5 W, 55.5 N
1997-Jan-4	10	30.0 W, 57.0 N
2001-Dec-12	12	7.5 W, 55.5 N
2002-Jan-6	10	6.0 E, 51.0 N
2003-Feb-21	8	6.0 E, 54.0 N
2005-Jan-28	11	18.0 W, 52.5 N
2005-Mar-4	9	30.0 W, 54.0 N
2006-Jan-31	12	6.0 W, 52.5 N
2006-Mar-1	8	49.5 W, 57.0 N
2007-Dec-17	11	4.5 E, 52.5 N
2009-Jan-28	12	10.5 E, 54.0 N
2010-Jan-3	8	37.5 W, 55.5 N
2010-Feb-4	16	16.5 W, 54.0 N
2010-Feb-5	10	34.5 W, 55.5 N
2010-Nov-26	11	33.0 W, 55.5 N

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**Table 3 – continued from previous page (NA 8-16 days)**

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
2011-Jan-29	9	9.0 W, 49.5 N
2013-Jan-22	8	43.5 W, 58.5 N
2018-Feb-25	8	0.0 E, 55.5 N

Table 4: NP anomalous events with 8-16 days persistence

<b>Peak date</b>	<b>Persistence [days]</b>	<b>Location</b>
1980-Feb-3	8	132.0 E, 54.0 N
1981-Nov-28	8	132.0 E, 57.0 N
1986-Jan-29	8	163.5 E, 52.5 N
1996-Dec-26	10	172.5 W, 54.0 N
2009-Dec-16	9	133.5 E, 52.5 N
2010-Dec-28	9	136.5 E, 51.0 N
2011-Jan-14	10	169.5 E, 54.0 N
2012-Jan-20	8	172.5 E, 54.0 N
2018-Jan-31	10	172.5 E, 52.5 N