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## **Ionospheric Plasma Flows Associated with the Formation of the Distorted Nightside End of A Transpolar Arc**

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### **Introduction**

List of the 17 nightside distorted TPA (“J”- and “L”-shaped TPA) events, which were selected from IMAGE FUV-WIC observations from 2000 to 2005, is shown.

	Event Date	TPA Interval (UT)	Duration Interval (minutes)	Type of Nightside Distorted TPA	IMF-B <sub>z</sub> Direction	IMF-B <sub>y</sub> Direction	IMAGE N/S Hemisphere
I	2000/9/22	6:34:53 – 8:25:08	110	J	Northward	Dawnward	NH
II	2000/11/5	5:34:24 – 7:08:24	94	L	Northward	Duskward	NH
III	2000/12/27	23:31:42 – 00:33:05	63	J	Northward to Southward	Dawnward to Duskward	NH
IV	2001/3/8	11:39:03 - 12:09:43	31	J	Northward	Duskward to Dawnward	NH
V	2001/12/31	10:20:34 – 14:40:46	260	J	Northward	Dawnward	NH
VI	2002/1/28	9:25:27 – 10:31:01	67	J	Southward	Dawnward	NH
VII	2002/3/2	12:02:40 – 12:39:34	37	J	Northward	Duskward	NH
VIII	2002/3/11 – 2002/3/12	23:42:23 – 00:15:10	33	J	Northward	Dawnward	NH
IX	2003/3/12	00:19:16 – 00:58:12	39	L	Northward	Duskward	NH
X	2002/3/12	1:12:32 – 1:37:07	25	L	Northward	Duskward	NH
XI	2002/12/17	14:28:39 – 15:48:47	80	J	Northward	Dawnward	NH
XII	2003/10/28	13:20:18 – 14:17:55	58	L	Northward	Duskward	NH
XIII	2003/11/23	15:46:25 – 16:25:34	39	J	Northward	Dawnward	NH
XIV	2004/6/5	9:42:37 – 10:15:44	33	L	Northward to Southward	Dawnward	SH
XV	2005/4/24	16:38:06 – 17:38:28	60	L	Northward	Dawnward/ Duskward	SH
XVI	2005/5/22	23:06:17 – 23:52:06	46	J	Southward	Duskward	SH
XVII	2005/6/1	11:28:38 – 12:14:28	46	J	Northward	Dawnward to Duskward	SH

**Table 1: The 17 nightside distorted TPA (“J”- and “L”-shaped TPA) events, which were selected from IMAGE FUV-WIC observations from 2000 to 2005, are listed. In this list, the information on the event date, TPA duration time, the type of nightside distorted TPA, IMF-B<sub>z</sub> and -B<sub>y</sub> polarities, clarified from the IMF data obtained from the solar wind OMNI database, and hemisphere of the TPA appearance is included.**