

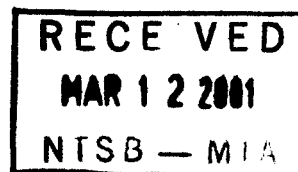
NATIONAL TRANSPORTATION SAFETY BOARD
Office of Research and Engineering *gwr*
Washington, DC

February 26, 2001

Recorded Radar Study

Specialist's Report of Investigation
By Alice Y. Park

MIA00FA041AB



A. A. ACCIDENT

Location: Deland, FL.
Date: 12/03/1999
Time: 1523 UTC
Aircraft: PA-44-180, N3038N
PA-28-161, N153ER

B. GROUP

Not Applicable

C. SUMMARY

On December 3, 1999, about 1523 UTC (Universal Time)¹, a Piper PA-44-180, N3038N and a Piper PA-28-161, N153ER collided in-flight near the departure end of runway 5 at the Deland Municipal-Sidney H Taylor Field Airport, Deland, Florida. Visual meteorological conditions prevailed at the time and a local Instrument Flight Rules (IFR) flight plan was filed for the 14 CFR Part 91 instructional flight of the PA-44-180 airplane. No flight plan was filed for the 14 CFR Part 91 instructional flight of the PA-28-161 airplane; none was required. Both airplanes were destroyed and the certified flight instructor and commercial pilot-rated student of the PA-44-180 airplane were fatally injured. The certified flight instructor and private pilot-rated student of the PA-28-161 airplane were also fatally injured.

¹ All radar times are given in Coordinated Universal Time (UTC) in accordance with FAA radar target reports unless otherwise stated.

Recorded radar data for the accident aircraft were obtained from the Federal Aviation Administration's (FAA's) Daytona Beach Airport facility. The continuous Disk Recording (CDR) data provided time, range, azimuth, and altitude information for N3038N and N153ER from time 14:22:00-15:21:00 UTC.

The radar data show that N3038N descended directly to Runway 23 at Deland Municipal-Sidney H Taylor Field Airport and N153ER departed from the airport headed toward the same area in which N3038N was descending.

D. DETAILS OF INVESTIGATION

1. CDR Radar Data

CDR data on 4mm DAT tape at the Federal Aviation Administration's (FAA) Daytona Beach airport radar system facility was obtained and processed by the National Transportation Safety Board. The system recorded secondary data² for the accident aircraft, which included time, range, azimuth, and mode C transponder altitudes. Initially, Piper PA-44-180 (N3038N) was assigned a transponder code of 0257 and Piper PA-28-161 (N153ER) was assigned a transponder code of 0112. Both transponder code 0257 and 0112 were changed to 1200 code after radar service was terminated at 15:18:08 UTC and at 14:34:11 UTC respectively.

The FAA's Automated Radar terminal system (ARTS) IIE utilizes Airport Surveillance Radar (ASR) antennas to track aircraft within the operational area of airport. The ASR-9 antenna at nearby Daytona Beach, Florida was the closest to the accident site and has an effective range of approximately 60 NM. The time interval between target reports is related to the rotation rate of the ASR antenna, which in this case was 1 revolution per 4.5 +/- 10% seconds.

The ASR data should be assessed using the following generally accepted accuracy limits:

ALTITUDE----- +/- 50 feet
RANGE----- +/- 380 feet
AZIMUTH----- +/- 2 ACP

The altitude and range accuracy limitations are usually constant assuming the aircraft transponder was calibrated and function properly. The azimuth accuracy limit is usually constant at +/- 2 ACP; however, the actual azimuth distance limit increases with range since the arc length of 4 ACP increases linearly with range.

² Air traffic control secondary radar systems transmit coded electromagnetic signals (interrogations) that can be received by transponder-equipped aircraft. The aircraft receives the signal, decodes it, and then transmits a coded electromagnetic signal in response to the interrogation. Secondary returns can provide information on the aircraft's identity, altitude, and position.

Table 1 and 2 provide CDR data, and table 3 and 4 displays tabular listings of latitude, longitude and x/y coordinates calculated from the CDR data of N153ER and N3038N, respectively. Table 5 provided CDR data of the last five BCN 1200 returns with tabular listings of the processed data.

2. Ground Track

The range and azimuth information found in the CDR data was processed into latitude and longitude values and x/y coordinates corresponding to east and north coordinates, respectively. The processed x/y data was then plotted using the Daytona Beach ASR antenna site as the origin for the plot. Communications taken from the ATC transcriptions are also inserted on the plot. Figure 1-a, 1-b, 1-c and 1-d show the plan views of the flight of N3038N for the time from 1439, 1459, 1512 and 1516 UTC to the last radar target of N3038N respectively. Figure 2 displays the plan view of the entire flight of N153ER. Figure 3 and 4 display both of aircraft from 15:12:00 UTC and 15:16:00 UTC to last radar targets respectively. In addition, the positions of Runway 16 (KDAB), Runway 23 (KDED), DONGS Intersection and Ormond Beach VORTAC are displayed on the plot for reference.

Figure 4 shows that N3038N descended straight down to airport after receiving the radar service termination communication from the controller. Flight N153ER turned to the northwest after departing Runway 5. Both aircraft transponder codes were changed to 1200 after radar service was terminated at 15:18:08 UTC and at 14:34:11 UTC for N3038N and N153ER respectively.

The CDR data of the last five BCN 1200 in table 5 can't be identified positively due to the close proximity of the two aircraft.

3. Altitude and Distance Profile

The distance from the Runway 23 threshold was determined using the position of the threshold obtained from the FAA. Figure 5-a, 5-b, 5-c, and 5-d show profile views of N3038N with different time frames. Figure 6 and 7 show profile views of N3038N approach to Runway 23 (KDED), and profile views of N153ER departure from airport from 15:12:00 UTC and 15:16:00 UTC to last radar target respectively. The positions of Runway 16 (KDAB), Runway 23 (KDED), DONGS Intersection and Ormond Beach VORTAC, which obtained from FAA, are displayed on the plot for reference.

Alice Y. Park
FAA Radar Specialist
Vehicle Performance Division



List of Attachments and Figures:

Table 1	CDR data (BCN 0112, N153ER)
Table 2	CDR data (BCN 0257, N3038N)
Table 3	Converted data (BCN 0112, N153ER)
Table 4	Converted data (BCN 0257, N3038N)
Table 5	CDR data of last five BCN 1200 radar returns
Figure 1 a - d	Ground Track Plot of N3038N
Figure 2	Ground Track Plot of N153ER
Figure 3	Ground Track Plot of N3038N and N153ER (1512 – last radar target)
Figure 4	Ground Track Plot of N3038N and N153ER (1516 – last radar target)
Figure 4-a	Ground Track Plot of N3038N and N153ER with Expanded scale
Figure 5 a - d	Altitude/Distance Plot of N3038N
Figure 6	Altitude/Distance (N3038N, 1512 – last radar target)
Figure 7	Altitude/Distance (N3038N, 1512 – last radar target)

Table 1

UTC TIME	Range	Azimuth	Altitude
HH:MM:SS	NM	ACP	Ft MSL
14:22:20	07.82	0989	200
14:22:25	07.94	0987	300
14:22:30	08.04	0985	300
14:22:34	08.11	0984	400
14:22:39	08.20	0980	500
14:22:44	08.32	0979	500
14:22:48	08.41	0977	600
14:22:53	08.50	0975	600
14:22:57	08.59	0973	700
14:23:02	08.70	0971	800
14:23:07	08.78	0971	800
14:23:11	08.87	0970	900
14:23:16	08.99	0968	900
14:23:20	09.10	0966	
14:23:25	09.18	0967	
14:23:30	09.27	0970	1100
14:23:34	09.35	0974	1200
14:23:39	09.44	0979	1200
14:23:44	09.49	0984	1200
14:23:48	09.57	0988	1300
14:23:53	09.66	0993	1400
14:24:02	09.80	1003	1500
14:24:06	09.87	1007	1500
14:24:11	09.97	1012	1600
14:24:16	10.06	1015	1600
14:24:20	10.13	1019	1700
14:24:25	10.22	1025	1700
14:24:29	10.31	1028	1700
14:24:34	10.39	1032	1800
14:24:39	10.48	1036	1800
14:24:43	10.56	1040	1900
14:24:48	10.66	1044	1900
14:24:53	10.74	1047	2000
14:24:57	10.83	1052	2000
14:25:02	10.92	1054	2100
14:25:07	11.01	1059	2100
14:25:11	11.09	1062	2200
14:25:16	11.18	1065	2300
14:25:20	11.26	1070	2300
14:25:25	11.33	1072	2300
14:25:30	11.43	1077	2400
14:25:34	11.52	1080	2400
14:25:39	11.60	1083	2500
14:25:44	11.69	1088	2500
14:25:48	11.79	1090	2500
14:25:53	11.88	1094	2500
14:25:57	11.99	1098	2500
14:26:02	12.10	1101	2500
14:26:07	12.20	1105	2500
14:26:11	12.31	1107	2500
14:26:16	12.42	1111	2500
14:26:20	12.53	1115	2500
14:26:25	12.65	1118	2600
14:26:30	12.76	1122	2600
14:26:34	12.88	1126	2500
14:26:39	13.01	1129	2500
14:26:43	13.11	1133	2600
14:26:48	13.24	1136	2600
14:26:53	13.34	1140	2600
14:26:57	13.47	1142	2500
14:27:02	13.59	1146	2500
14:27:06	13.72	1149	2500
14:27:11	13.82	1153	2500

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14:27:16	13.90	1155	
14:27:20	13.94	1166	2400
14:27:25	13.93	1173	2400
14:27:30	13.90	1179	2400
14:27:34	13.82	1186	2400
14:27:39	13.72	1190	2500
14:27:44	13.60	1196	2400
14:27:48	13.51	1201	2400
14:27:53	13.38	1206	2400
14:27:57	13.26	1211	2400
14:28:02	13.15	1214	2400
14:28:07	13.02	1219	2400
14:28:11	12.90	1223	2400
14:28:16	12.77	1227	2400
14:28:20	12.66	1232	2300
14:28:25	12.54	1237	2400
14:28:30	12.44	1242	2400
14:28:34	12.34	1248	2400
14:28:39	12.25	1253	2500
14:28:44	12.15	1259	2500
14:28:48	12.05	1266	2500
14:28:53	11.97	1271	2500
14:28:58	11.85	1277	2500
14:29:02	11.79	1283	2500
14:29:07	11.69	1289	2500
14:29:11	11.61	1297	2500
14:29:16	11.55	1303	2500
14:29:21	11.47	1309	2500
14:29:25	11.39	1317	2500
14:29:30	11.30	1324	2500
14:29:34	11.22	1332	2500
14:29:39	11.17	1339	2600
14:29:44	11.09	1347	2600
14:29:48	11.02	1353	2600
14:29:53	10.93	1361	2600
14:29:58	10.86	1368	2600
14:30:02	10.77	1376	2600
14:30:07	10.68	1384	2600
14:30:11	10.62	1391	2600
14:30:16	10.52	1399	2500
14:30:21	10.43	1407	2500
14:30:25	10.34	1415	2500
14:30:30	10.27	1422	
14:30:35	10.14	1430	2400
14:30:39	10.03	1437	2400
14:30:44	09.91	1444	2400
14:30:48	09.81	1451	2500
14:30:53	09.70	1459	2500
14:30:57	09.61	1467	2500
14:31:02	09.49	1475	2500
14:31:07	09.41	1484	2500
14:31:12	09.29	1491	2500
14:31:16	09.19	1501	2500
14:31:21	09.14	1510	2500
14:31:25	09.11	1520	2500
14:31:30	09.08	1531	2500
14:31:35	09.08	1542	2500
14:31:39	09.11	1551	2500
14:31:44	09.13	1561	2500
14:31:48	09.21	1571	2500
14:31:53	09.27	1579	2500
14:31:58	09.36	1588	2500
14:32:02	09.41	1596	2500
14:32:07	09.50	1605	2500
14:32:12	09.57	1613	2500

14:32:16	09.66	1620	2500
14:32:21	09.76	1628	2500
14:32:25	09.83	1635	2500
14:32:30	09.93	1641	2500
14:32:35	10.04	1647	2500
14:32:39	10.13	1654	2500
14:32:44	10.22	1661	2500
14:32:49	10.33	1667	2500
14:32:53	10.44	1672	2500
14:32:58	10.53	1678	2500
14:33:02	10.65	1684	2500
14:33:07	10.75	1690	2500
14:33:12	10.84	1694	2500
14:33:16	10.96	1701	2500
14:33:21	11.07	1706	2500
14:33:25	11.17	1711	2500
14:33:30	11.29	1715	2500
14:33:35	11.40	1722	2500
14:33:39	11.51	1726	2500
14:33:44	11.60	1732	2500
14:33:49	11.72	1735	2500
14:33:53	11.83	1740	2500
14:33:58	11.93	1745	2500
14:34:02	12.05	1750	2500
14:34:07	12.14	1756	2500
14:34:12	12.25	1760	2500
14:34:16	12.35	1766	2500
14:34:21	12.45	1771	2500
14:34:25	12.56	1776	2500
14:34:30	12.65	1781	2500
14:34:35	12.78	1786	2500
14:34:39	12.88	1791	2500
14:34:44	12.96	1801	
14:34:49	13.03	1804	2500
14:34:53	13.09	1810	2500
14:34:58	13.13	1818	2500
14:35:02	13.17	1826	2500
14:35:07	13.22	1833	2500
14:35:12	13.24	1840	2500
14:35:16	13.29	1847	2500
14:35:21	13.31	1854	2500
14:35:26	13.33	1862	2500
14:35:30	13.38	1868	2500
14:35:35	13.40	1877	2500
14:35:39	13.42	1883	2500
14:35:44	13.46	1892	2500
14:35:49	13.50	1898	2500
14:35:53	13.53	1905	2500
14:35:58	13.57	1912	2500
14:36:02	13.62	1919	2500
14:36:07	13.64	1926	2500
14:36:12	13.68	1934	2500
14:36:16	13.72	1941	2500
14:36:21	13.75	1948	2500
14:36:26	13.78	1955	2500
14:36:30	13.83	1962	2500
14:36:35	13.86	1970	2400
14:36:40	13.91	1977	2400
14:36:44	13.96	1984	2500
14:36:49	13.99	1991	2500
14:36:53	14.03	1997	2500
14:36:58	14.11	2004	2500
14:37:03	14.15	2011	2500
14:37:07	14.22	2017	2500
14:37:12	14.25	2024	2500

14:37:16	14.31	2029	2500
14:37:21	14.36	2037	2500
14:37:26	14.41	2043	2500
14:37:30	14.44	2050	2500
14:37:35	14.42	2057	2500
14:37:40	14.39	2064	2500
14:37:44	14.35	2071	2500
14:37:49	14.27	2077	2500
14:37:53	14.16	2084	2500
14:37:58	14.08	2089	2500
14:38:03	13.96	2093	2500
14:38:07	13.85	2098	2500
14:38:12	13.74	2103	2400
14:38:16	13.60	2108	2400
14:38:21	13.47	2113	2300
14:38:26	13.37	2117	2300
14:38:30	13.22	2122	2200
14:38:35	13.10	2127	2100
14:38:40	12.98	2132	2100
14:38:44	12.86	2136	2000
14:38:49	12.73	2140	1900
14:38:53	12.60	2145	1900
14:38:58	12.48	2151	1800
14:39:03	12.34	2154	1800
14:39:07	12.22	2159	1700
14:39:12	12.10	2163	1700
14:39:16	11.96	2168	1600
14:39:21	11.82	2172	1600
14:39:26	11.70	2176	1500
14:39:30	11.57	2180	
14:39:35	11.43	2181	1400
14:39:40	11.31	2185	1400
14:39:44	11.15	2188	1300
14:39:49	11.01	2191	1300
14:39:53	10.88	2194	1200
14:39:58	10.74	2197	1200
14:40:03	10.62	2201	1100
14:40:07	10.47	2203	1100
14:40:12	10.35	2207	1100
14:40:16	10.22	2210	
14:40:21	10.10	2213	1000
14:40:26	09.95	2214	1000
14:40:30	09.83	2218	
14:40:35	09.70	2222	
14:40:39	09.56	2224	
14:40:44	09.42	2228	900
14:40:49	09.29	2231	900
14:40:53	09.17	2234	900
14:40:58	09.03	2238	
14:41:03	08.91	2242	900
14:41:07	08.77	2248	900
14:41:12	08.63	2250	900
14:41:17	08.51	2252	900
14:41:21	08.36	2254	1000
14:41:26	08.24	2254	1000
14:41:30	08.12	2253	1000
14:41:35	07.99	2252	1000
14:41:39	07.85	2251	1100
14:41:44	07.73	2249	1100
14:41:49	07.59	2248	1100
14:41:54	07.46	2246	1200
14:41:58	07.34	2246	1200
14:42:03	07.19	2244	1200
14:42:07	07.07	2243	1200
14:42:12	06.94	2240	1200

14:42:16	06.78	2239	1200
14:42:21	06.66	2241	1200
14:42:26	06.51	2242	1300
14:42:30	06.38	2245	1300
14:42:35	06.24	2250	1300
14:42:40	06.10	2256	1300
14:42:44	05.96	2263	1300
14:42:49	05.83	2271	1300
14:42:53	05.71	2279	1300
14:42:58	05.59	2290	1300
14:43:02	05.45	2301	1300
14:43:07	05.33	2313	1300
14:43:12	05.20	2323	1300
14:43:16	05.07	2337	1300
14:43:21	04.95	2349	1200
14:43:26	04.83	2362	1300
14:43:31	04.70	2375	
14:43:35	04.60	2391	1200
14:43:40	04.51	2411	1300
14:43:44	04.44	2432	1300
14:43:49	04.38	2452	1300
14:43:53	04.33	2473	1300
14:43:58	04.29	2497	1200
14:44:03	04.26	2523	1200
14:44:07	04.25	2548	1200
14:44:12	04.26	2571	1200
14:44:17	04.30	2594	1100
14:44:21	04.38	2618	1100
14:44:26	04.44	2637	1100
14:44:31	04.56	2654	1100
14:44:35	04.66	2669	1100
14:44:40	04.79	2677	1100
14:44:45	04.93	2685	1100
14:44:49	05.09	2688	1000
14:44:54	05.24	2690	1000
14:44:59	05.38	2690	1000
14:45:03	05.54	2690	1000
14:45:08	05.68	2687	1000
14:45:12	05.83	2685	1000
14:45:17	05.98	2683	1000
14:45:21	06.12	2681	1000
14:45:26	06.29	2676	1000
14:45:31	06.40	2669	1000
14:45:35	06.49	2659	900
14:45:40	06.60	2646	900
14:45:45	06.66	2637	900
14:45:49	06.77	2627	900
14:45:54	06.92	2624	1000
14:45:58	07.06	2623	1000
14:46:03	07.20	2622	1000
14:46:07	07.33	2626	1000
14:46:12	07.45	2632	1000
14:46:17	07.60	2631	
14:46:21	07.64	2623	1000
14:46:26	07.66	2613	900
14:46:30	07.69	2603	800
14:46:35	07.72	2590	800
14:46:40	07.75	2581	700
14:46:44	07.82	2571	700
14:46:49	07.89	2563	700
14:46:53	08.02	2558	700
14:46:58	08.14	2557	700
14:47:03	08.27	2559	700
14:47:07	08.38	2562	700
14:47:12	08.49	2566	900

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14:47:17	08.61	2569	800
14:47:21	08.71	2573	900
14:47:26	08.81	2576	900
14:47:30	08.92	2580	900
14:47:35	09.03	2584	900
14:47:40	09.13	2587	900
14:47:44	09.26	2588	900
14:47:49	09.36	2586	
14:47:53	09.42	2582	800
14:47:58	09.48	2576	800
14:48:03	09.53	2571	800
14:48:07	09.56	2564	700\
14:48:12	09.59	2560	700
14:48:17	09.61	2555	700
14:48:21	09.62	2549	700
14:48:26	09.62	2544	700
14:48:30	09.65	2536	600
14:48:35	09.66	2532	600
14:48:39	09.66	2525	600
14:48:44	09.65	2520	600
14:48:49	09.66	2514	600
14:48:53	09.66	2508	500
14:48:58	09.65	2502	500
14:49:02	09.65	2497	500
14:49:07	09.63	2492	500
14:49:12	09.57	2487	500
14:49:16	09.52	2483	400
14:49:21	09.45	2479	
14:49:26	09.38	2476	400
14:49:30	09.33	2473	
14:49:35	09.23	2471	300
14:49:39	09.16	2471	300
14:49:44	09.08	2471	
14:49:49	09.00	2469	
14:49:53	08.93	2467	
14:50:07	08.69	2459	
14:50:58	08.08	2454	
14:51:03	07.98	2451	300
14:51:07	07.92	2449	400
14:51:12	07.81	2445	400
14:51:16	07.73	2444	400
14:51:21	07.64	2440	500
14:51:25	07.55	2436	500
14:51:30	07.44	2432	500
14:51:35	07.33	2429	600
14:51:39	07.22	2424	700
14:51:44	07.12	2424	700
14:51:48	07.03	2428	800
14:51:53	06.93	2436	800
14:51:58	06.89	2447	900
14:52:02	06.87	2458	900
14:52:07	06.88	2470	1000
14:52:12	06.91	2481	1000
14:52:16	07.00	2489	1000
14:52:21	07.13	2495	1000
14:52:25	07.24	2497	1000
14:52:30	07.38	2498	1000
14:52:35	07.52	2498	1000
14:52:39	07.65	2500	1000
14:52:44	07.78	2499	1000
14:52:48	07.92	2501	1000
14:52:53	08.05	2503	1000
14:52:58	08.18	2503	1000
14:53:02	08.32	2504	1000
14:53:07	08.44	2507	1000

14:53:12	08.57	2509	1000
14:53:16	08.71	2511	1000
14:53:21	08.82	2511	1000
14:53:25	08.93	2515	1000
14:53:30	09.08	2516	1000
14:53:35	09.18	2519	1000
14:53:39	09.29	2519	900
14:53:44	09.40	2518	900
14:53:48	09.51	2513	
14:53:53	09.55	2509	
14:53:58	09.55	2500	800
14:54:02	09.58	2484	
14:54:07	09.54	2486	700
14:54:11	09.49	2480	700
14:54:16	09.44	2478	
14:54:21	09.33	2475	600
14:54:25	09.21	2472	500
14:54:30	09.12	2472	500
14:54:35	09.03	2469	400
14:54:39	08.96	2468	
14:54:44	08.88	2466	
14:54:48	08.78	2465	
14:54:53	08.68	2465	
14:54:58	08.59	2468	
14:56:44	08.03	2459	
14:56:48	07.94	2451	200
14:56:53	07.85	2448	300
14:56:58	07.77	2446	300
14:57:07	07.58	2442	400
14:57:12	07.51	2439	400
14:57:16	07.40	2434	500
14:57:21	07.31	2433	500
14:57:25	07.18	2433	
14:57:30	07.09	2437	600
14:57:34	07.02	2445	700
14:57:39	06.97	2455	700
14:57:44	06.93	2466	800
14:57:48	06.92	2477	800
14:57:53	06.94	2490	900
14:57:57	07.02	2499	900
14:58:02	07.13	2505	900
14:58:07	07.25	2508	900
14:58:11	07.40	2510	900
14:58:16	07.55	2511	900
14:58:21	07.67	2513	900
14:58:25	07.80	2515	900
14:58:30	07.93	2517	900
14:58:34	08.07	2520	900
14:58:39	08.21	2522	900
14:58:44	08.34	2526	900
14:58:48	08.46	2526	900
14:58:53	08.59	2530	900
14:58:58	08.71	2532	900
14:59:02	08.81	2535	900
14:59:07	08.92	2538	900
14:59:11	09.03	2539	800
14:59:16	09.15	2538	800
14:59:20	09.24	2530	
14:59:25	09.26	2528	700
14:59:30	09.32	2520	700
14:59:34	09.32	2515	700
14:59:39	09.38	2509	600
14:59:44	09.39	2503	600
14:59:48	09.44	2497	500
14:59:53	09.43	2491	500

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14:59:57	09.40	2487	500
15:00:02	09.36	2484	400
15:00:07	09.29	2479	400
15:00:11	09.23	2475	400
15:00:16	09.15	2473	300
15:00:20	09.08	2470	
15:00:25	09.00	2468	300
15:00:30	08.94	2468	
15:00:34	08.85	2467	
15:00:39	08.77	2466	
15:00:43	08.69	2463	
15:02:06	08.00	2452	300
15:02:11	07.88	2450	300
15:02:16	07.79	2448	400
15:02:20	07.67	2446	500
15:02:25	09.76	2450	3300
15:02:30	07.44	2440	700
15:02:34	07.35	2436	700
15:02:39	07.22	2437	800
15:02:43	07.10	2440	900
15:02:48	07.00	2448	900
15:02:53	06.91	2459	900
15:02:57	06.90	2470	1000
15:03:02	06.88	2483	1000
15:03:07	06.89	2494	1000
15:03:11	06.92	2507	1000
15:03:16	06.98	2517	1000
15:03:20	07.10	2522	1000
15:03:25	07.21	2527	1000
15:03:30	07.35	2527	1000
15:03:34	07.48	2528	1000
15:03:39	07.59	2531	900
15:03:43	07.71	2532	900
15:03:48	07.87	2531	900
15:03:53	07.97	2532	1000
15:03:57	08.10	2534	1000
15:04:02	08.22	2534	1000
15:04:07	08.35	2536	1000
15:04:11	08.47	2536	1000
15:04:16	08.59	2539	1000
15:04:20	08.70	2540	1000
15:04:25	08.83	2541	1000
15:04:30	08.95	2542	1000
15:04:34	09.07	2542	900
15:04:39	09.18	2541	900
15:04:43	09.30	2537	900
15:04:48	09.37	2532	900
15:04:53	09.41	2526	800
15:04:57	09.44	2519	800
15:05:02	09.43	2511	800
15:05:07	09.44	2503	700
15:05:11	09.44	2496	700
15:05:16	09.44	2488	700
15:05:20	09.43	2482	600
15:05:25	09.35	2477	600
15:05:30	09.27	2473	500
15:05:34	09.16	2471	500
15:05:39	09.05	2470	400
15:05:43	08.96	2468	400
15:05:48	08.87	2467	400
15:05:53	08.77	2466	300
15:05:57	08.69	2463	300
15:06:02	08.59	2462	200
15:06:11	07.81	2448	200
15:06:16	07.72	2447	300

15:06:20	07.62	2445	400
15:06:25	07.51	2444	400
15:06:30	07.43	2443	500
15:06:34	07.33	2441	600
15:06:39	07.22	2443	600
15:06:43	07.15	2447	700
15:06:48	07.08	2456	700
15:06:53	07.04	2467	700
15:06:57	07.03	2478	800
15:07:02	07.04	2487	800
15:07:07	07.11	2498	900
15:07:11	07.21	2504	900
15:07:16	07.33	2509	900
15:07:20	07.47	2512	900
15:07:25	07.57	2514	900
15:07:30	07.74	2518	900
15:07:34	07.88	2520	1000
15:07:39	08.01	2524	1000
15:07:43	08.13	2525	900
15:07:48	08.26	2528	900
15:07:53	08.41	2531	900
15:07:57	08.54	2535	900
15:08:02	08.66	2537	900
15:08:07	08.78	2542	900
15:08:11	08.90	2545	900
15:08:16	08.97	2547	800
15:08:20	09.11	2551	800
15:08:25	09.21	2553	800
15:08:30	09.32	2556	800
15:08:34	09.43	2554	
15:08:39	09.49	2550	900
15:08:43	09.52	2544	800
15:08:48	09.54	2537	800
15:08:53	09.54	2532	700
15:08:57	09.55	2525	700
15:09:02	09.57	2520	700
15:09:06	09.57	2513	700
15:09:11	09.58	2507	600
15:09:16	09.58	2493	
15:09:16	09.57	2502	600
15:09:20	09.57	2496	600
15:09:25	09.55	2491	600
15:09:29	09.56	2484	600
15:09:34	09.53	2480	500
15:09:39	09.46	2474	
15:09:43	09.40	2474	
15:09:48	09.30	2473	
15:09:53	09.23	2471	400
15:09:57	09.16	2471	
15:10:02	09.05	2470	
15:10:06	08.97	2469	
15:10:16	08.83	2465	
15:10:20	08.74	2463	
15:10:25	08.68	2463	
15:11:06	07.91	2450	200
15:11:11	07.79	2448	300
15:11:16	07.68	2447	300
15:11:20	07.58	2445	400
15:11:25	07.48	2442	400
15:11:29	07.37	2441	500
15:11:34	07.26	2440	600
15:11:39	07.14	2442	700
15:11:43	07.06	2449	700
15:11:48	07.01	2457	700
15:11:53	06.94	2467	800

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15:11:57	06.91	2479	800
15:12:02	06.96	2490	800
15:12:06	07.05	2497	900
15:12:11	07.17	2504	900
15:12:15	07.30	2509	900
15:12:20	07.42	2512	900
15:12:25	07.57	2516	1000
15:12:29	07.69	2521	1000
15:12:34	07.81	2524	1000
15:12:39	07.96	2528	900
15:12:43	08.07	2531	900
15:12:48	08.22	2534	900
15:12:53	08.34	2537	900
15:12:57	08.45	2539	
15:13:02	08.57	2541	900
15:13:06	08.69	2545	900
15:13:11	08.78	2546	900
15:13:16	08.89	2548	800
15:13:20	09.00	2550	700
15:13:25	09.11	2551	800
15:13:29	09.20	2549	
15:13:34	09.26	2547	
15:13:38	09.29	2537	700
15:13:43	09.29	2532	700
15:13:48	09.30	2526	600
15:13:52	09.29	2519	600
15:13:57	09.30	2513	600
15:14:02	09.30	2508	500
15:14:06	09.29	2502	
15:14:11	09.29	2494	500
15:14:15	09.30	2488	500
15:14:20	09.28	2482	400
15:14:25	09.28	2476	400
15:14:29	09.21	2476	
15:14:34	09.14	2471	
15:14:38	09.05	2470	
15:14:43	08.96	2470	
15:14:48	08.90	2460	
15:14:52	08.81	2466	300
15:14:57	08.71	2468	
15:15:02	08.66	2465	
15:15:06	08.59	2459	
15:19:48	07.94	2451	
15:19:52	07.84	2447	
15:19:57	07.72	2447	
15:20:01	07.61	2446	
15:20:06	07.50	2445	
15:20:11	07.41	2444	500

Table 2

UTC TIME	Range	Azimuth	Altitude
HH:MM:SS	NM	ACP	Ft MSL
14:39:52	07.04	0988	
14:39:57	07.11	0982	200
14:40:01	07.21	0976	200
14:40:06	07.32	0973	300
14:40:11	07.44	0968	400
14:40:15	07.55	0965	500
14:40:20	07.65	0961	600
14:40:24	07.76	0957	600
14:40:29	07.91	0952	
14:40:34	07.96	0949	800
14:40:38	08.07	0942	800
14:40:43	08.17	0939	900
14:40:47	08.27	0932	1000
14:40:52	08.34	0925	1000
14:40:57	08.40	0918	1100
14:41:01	08.49	0911	1100
14:41:06	08.55	0903	1200
14:41:10	08.63	0895	1200
14:41:15	08.71	0889	1300
14:41:20	08.80	0883	1400
14:41:24	08.88	0875	1400
14:41:29	08.97	0867	1500
14:41:33	09.04	0861	1500
14:41:38	09.13	0855	1600
14:41:43	09.23	0848	1600
14:41:47	09.32	0843	1700
14:41:52	09.42	0836	1700
14:41:56	09.52	0830	1800
14:42:01	09.62	0825	1900
14:42:06	09.74	0819	1900
14:42:10	09.82	0813	1900
14:42:15	09.93	0806	1900
14:42:19	10.04	0801	1900
14:42:24	10.15	0795	1900
14:42:28	10.27	0788	1800
14:42:33	10.39	0781	1800
14:42:38	10.53	0776	1800
14:42:42	10.64	0770	1700
14:42:47	10.79	0764	1700
14:42:52	10.91	0759	1700
14:42:56	11.04	0754	1700
14:43:01	11.16	0749	1600
14:43:05	11.29	0743	1600
14:43:10	11.40	0739	1700
14:43:15	11.51	0734	1700
14:43:19	11.61	0729	1700
14:43:24	11.73	0724	1700
14:43:29	11.83	0719	1700
14:43:33	11.96	0714	1700
14:43:38	12.06	0708	1700
14:43:42	12.18	0703	1700
14:43:47	12.28	0698	1700
14:43:51	12.41	0693	1700
14:43:56	12.53	0688	1700
14:44:01	12.65	0683	1700
14:44:05	12.80	0680	1700
14:44:10	12.94	0675	1700
14:44:15	13.07	0672	1700
14:44:19	13.23	0668	1700
14:44:24	13.36	0664	1700
14:44:29	13.47	0656	1700
14:44:33	13.55	0650	1700
14:44:38	13.64	0644	1700

14:44:42	13.70	0636	1700
14:44:47	13.76	0628	1700
14:44:51	13.80	0620	1700
14:44:56	13.86	0613	1700
14:45:01	13.93	0605	1700
14:45:05	14.00	0599	1800
14:45:10	14.06	0591	1900
14:45:14	14.12	0585	1900
14:45:19	14.17	0578	1900
14:45:24	14.22	0572	2000
14:45:28	14.28	0565	2000
14:45:33	14.37	0557	2100
14:45:42	14.52	0545	2100
14:45:47	14.60	0539	2200
14:45:51	14.67	0532	2300
14:45:56	14.75	0527	2300
14:46:00	14.83	0521	2300
14:46:05	14.92	0515	2400
14:46:09	15.00	0509	2400
14:46:14	15.07	0503	2500
14:46:19	15.15	0496	2500
14:46:24	15.26	0490	
14:46:28	15.24	0483	2500
14:46:33	15.24	0476	2600
14:46:37	15.26	0469	
14:46:42	15.16	0462	2500
14:46:46	15.05	0456	2500
14:46:51	14.94	0450	2500
14:46:56	14.78	0445	2500
14:47:01	14.62	0443	2600
14:47:05	14.48	0440	2500
14:47:10	14.30	0438	2500
14:47:14	14.14	0435	2500
14:47:19	13.97	0432	2500
14:47:23	13.80	0430	2500
14:47:28	13.66	0426	2500
14:47:33	13.49	0424	2500
14:47:37	13.34	0422	2500
14:47:42	13.18	0419	2500
14:47:46	13.01	0417	2600
14:47:51	12.87	0414	2600
14:47:56	12.72	0411	2600
14:48:00	12.54	0409	2600
14:48:05	12.38	0406	2600
14:48:09	12.22	0403	2600
14:48:14	12.06	0400	2600
14:48:19	11.90	0397	2600
14:48:23	11.22	0410	
14:48:32	11.43	0387	2600
14:48:37	11.27	0384	2600
14:48:42	11.47	0347	
14:48:42	11.11	0380	2600
14:48:51	10.62	0375	2600
14:48:56	10.65	0372	2600
14:49:00	10.50	0370	2600
14:49:05	10.35	0366	2600
14:49:09	10.20	0362	2500
14:49:14	10.06	0357	2600
14:49:19	09.93	0354	
14:49:23	09.82	0349	2600
14:49:28	09.67	0343	2500
14:49:32	09.53	0336	2600
14:49:37	09.42	0330	2600
14:49:42	09.30	0324	2600
14:49:51	09.08	0309	2600

14:49:55	09.00	0300	2600
14:50:00	08.92	0291	2600
14:50:05	08.87	0280	2600
14:50:09	08.86	0270	2600
14:50:14	08.88	0258	2600
14:50:19	08.96	0250	2600
14:50:23	09.07	0243	2600
14:50:28	09.17	0236	
14:50:32	09.30	0230	2600
14:50:37	09.41	0224	2600
14:50:42	09.52	0219	2600
14:50:46	09.67	0214	
14:50:51	09.79	0209	2600
14:50:55	09.91	0204	
14:51:00	10.06	0200	2700
14:51:04	10.19	0195	2600
14:51:09	10.34	0190	2600
14:51:14	10.48	0186	2600
14:51:18	10.61	0181	2600
14:51:23	10.75	0176	2600
14:51:27	10.90	0172	2600
14:51:32	11.04	0168	2600
14:51:37	11.17	0163	2600
14:51:41	11.30	0157	2600
14:51:46	11.45	0153	2600
14:51:51	11.56	0148	2600
14:51:55	11.70	0144	2500
14:52:00	11.86	0141	2500
14:52:04	12.00	0136	2500
14:52:09	12.15	0133	2400
14:52:14	12.30	0128	2400
14:52:18	12.44	0125	2300
14:52:23	12.58	0121	2300
14:52:27	12.75	0117	2300
14:52:32	12.87	0113	2200
14:52:37	13.01	0109	2200
14:52:41	13.10	0102	2200
14:52:46	13.18	0095	2100
14:52:51	13.24	0086	2000
14:52:55	13.29	0079	2000
14:52:59	13.34	0071	1900
14:53:04	13.40	0062	1900
14:53:09	13.46	0054	1900
14:53:13	13.53	0048	1900
14:53:18	13.58	0039	1800
14:53:23	13.67	0031	1800
14:53:27	13.70	0024	1700
14:53:32	13.78	0017	1700
14:53:37	13.84	0010	1700
14:53:41	13.91	0002	1700
14:53:46	13.97	4091	1600
14:53:50	14.04	4085	1600
14:53:55	14.16	4079	1600
14:53:59	14.26	4073	1600
14:54:04	14.40	4069	1600
14:54:09	14.55	4066	1600
14:54:13	14.69	4064	1700
14:54:18	14.84	4065	1700
14:54:23	15.00	4065	1600
14:54:27	15.12	4067	1600
14:54:32	15.25	4071	1700
14:54:36	15.34	4075	1700
14:54:41	15.44	4080	1700
14:54:45	15.52	4083	
14:54:50	15.55	4090	

14:54:55	15.55	4094	1700
14:54:59	15.54	0004	1700
14:55:04	15.50	0010	1700
14:55:09	15.42	0015	1700
14:55:13	15.34	0018	1700
14:55:18	15.23	0022	1700
14:55:22	15.13	0025	1700
14:55:27	15.00	0027	1700
14:55:32	14.90	0030	1700
14:55:36	14.77	0032	1700
14:55:41	14.66	0036	1700
14:55:46	14.57	0040	1700
14:55:50	14.45	0042	1700
14:55:55	14.34	0047	1600
14:55:59	14.23	0051	1600
14:56:04	14.14	0055	1600
14:56:09	14.03	0060	1600
14:56:13	13.90	0062	1600
14:56:18	13.80	0066	1600
14:56:22	13.67	0070	1700
14:56:27	13.56	0074	1700
14:56:32	13.44	0079	1600
14:56:36	13.32	0084	1700
14:56:41	13.20	0090	1700
14:56:46	13.08	0093	1700
14:56:50	12.96	0100	1700
14:56:55	12.84	0105	1700
14:56:59	12.72	0110	1700
14:57:04	12.61	0115	1700
14:57:09	12.47	0119	1700
14:57:13	12.34	0125	1700
14:57:18	12.22	0130	1600
14:57:23	12.11	0136	1600
14:57:27	11.98	0142	1600
14:57:32	11.83	0148	1600
14:57:36	11.72	0153	1600
14:57:41	11.57	0158	1700
14:57:45	11.43	0162	1700
14:57:50	11.30	0167	1700
14:57:55	11.16	0173	1700
14:57:59	11.03	0179	1700
14:58:04	10.90	0184	1600
14:58:09	10.75	0190	1700
14:58:13	10.62	0195	1700
14:58:18	10.50	0201	1700
14:58:23	10.39	0208	1700
14:58:27	10.27	0217	1700
14:58:32	10.16	0224	1700
14:58:37	10.06	0231	1700
14:58:41	09.77	0240	1700
14:58:46	09.84	0248	1700
14:58:50	09.71	0255	1700
14:59:00	09.50	0271	1700
14:59:04	09.41	0280	1700
14:59:09	09.30	0291	
14:59:14	09.20	0298	1700
14:59:18	09.11	0305	1700
14:59:23	08.99	0316	1600
14:59:27	08.88	0324	1600
14:59:32	08.78	0331	1600
14:59:36	08.70	0340	1600
14:59:41	08.60	0349	1500
14:59:46	08.51	0358	1400
14:59:50	08.43	0368	1400
14:59:55	08.36	0376	1400

15:00:00	08.29	0386	1300
15:00:04	08.19	0394	1300
15:00:09	08.09	0403	1200
15:00:14	08.01	0413	1200
15:00:18	07.92	0421	1200
15:00:23	07.87	0431	1200
15:00:27	07.81	0441	1100
15:00:32	07.76	0450	1100
15:00:37	07.70	0460	1000
15:00:41	07.65	0470	1000
15:00:46	07.60	0480	1000
15:00:51	07.55	0491	900
15:00:55	07.49	0501	900
15:00:59	07.44	0512	900
15:01:04	07.43	0523	900
15:01:09	07.40	0533	800
15:01:14	07.39	0544	800
15:01:18	07.35	0555	800
15:01:23	07.31	0565	800
15:01:28	07.28	0576	700
15:01:32	07.24	0587	700
15:01:37	07.19	0597	700
15:01:41	07.14	0607	700
15:01:46	07.07	0617	
15:01:51	06.98	0626	800
15:01:55	06.89	0634	900
15:02:00	06.77	0640	900
15:02:04	06.63	0642	900
15:02:09	06.50	0641	1000
15:02:14	06.37	0637	1000
15:02:18	06.24	0630	1100
15:02:23	06.13	0619	1100
15:02:28	06.04	0607	1200
15:02:32	05.97	0595	1200
15:02:37	05.92	0579	1300
15:02:41	05.89	0564	1400
15:02:46	05.86	0550	1400
15:02:51	05.81	0532	1400
15:02:55	05.80	0517	1500
15:03:00	05.76	0500	1600
15:03:04	05.73	0485	1700
15:03:09	05.71	0468	1700
15:03:14	05.70	0451	1700
15:03:18	05.69	0435	1800
15:03:23	05.68	0418	1900
15:03:27	05.68	0402	1900
15:03:32	05.68	0384	2000
15:03:36	05.67	0366	2000
15:03:41	05.69	0350	2100
15:03:46	05.69	0332	2100
15:03:50	05.72	0313	2100
15:03:55	05.72	0297	2100
15:03:59	05.72	0278	2200
15:04:04	05.74	0261	2100
15:04:09	05.78	0243	2100
15:04:13	05.81	0224	2100
15:04:18	05.84	0207	2200
15:04:22	05.86	0189	2200
15:04:27	05.89	0172	2200
15:04:32	05.95	0154	2100
15:04:36	06.02	0137	2100
15:04:41	06.09	0121	2100
15:04:45	06.15	0106	2100
15:04:50	06.24	0089	2100
15:04:55	06.32	0074	2100

15:04:59	06.45	0061	
15:05:04	06.46	0044	2100
15:05:08	06.49	0028	2100
15:05:13	06.53	0010	2100
15:05:17	06.55	4090	2100
15:05:22	06.60	4075	2100
15:05:27	06.64	4057	2100
15:05:31	06.69	4042	2100
15:05:36	06.77	4027	2100
15:05:40	06.84	4012	2100
15:05:45	06.91	3999	2100
15:05:50	07.02	3984	2100
15:05:54	07.12	3973	2100
15:05:59	07.21	3962	2100
15:06:03	07.34	3951	2100
15:06:08	07.49	3941	2100
15:06:13	07.62	3932	2100
15:06:17	07.75	3924	2100
15:06:22	07.89	3917	2100
15:06:27	08.03	3915	2100
15:06:31	08.20	3917	2100
15:06:36	08.36	3921	2100
15:06:40	08.45	3929	2100
15:06:45	08.58	3937	2100
15:06:50	08.62	3947	2100
15:06:54	08.69	3957	2100
15:06:59	08.71	3968	2200
15:07:03	08.72	3978	2200
15:07:08	08.69	3987	2100
15:07:13	08.66	3998	2200
15:07:17	08.60	4007	2200
15:07:22	08.54	4017	2200
15:07:27	08.46	4024	2200
15:07:31	08.38	4034	2200
15:07:36	08.30	4042	2200
15:07:40	08.20	4050	2200
15:07:45	08.11	4059	2200
15:07:50	08.05	4069	2200
15:07:54	08.03	4080	2200
15:07:59	08.03	4091	2100
15:08:03	08.06	0007	2100
15:08:08	08.10	0018	2100
15:08:13	08.12	0029	2100
15:08:18	08.17	0041	2100
15:08:22	08.19	0052	2100
15:08:27	08.21	0064	2100
15:08:32	08.25	0075	2100
15:08:36	08.30	0085	2100
15:08:41	08.33	0095	2100
15:08:45	08.35	0106	2100
15:08:50	08.36	0119	2100
15:08:54	08.39	0129	2100
15:08:59	08.40	0140	2100
15:09:04	08.43	0150	2100
15:09:08	08.47	0161	2100
15:09:13	08.48	0171	2100
15:09:18	08.51	0183	2100
15:09:22	08.51	0193	2100
15:09:27	08.56	0204	2100
15:09:31	08.59	0214	2100
15:09:36	08.60	0225	2100
15:09:41	08.63	0235	2100
15:09:45	08.67	0246	2100
15:09:50	08.71	0257	2000
15:09:55	08.76	0264	

15:09:59	08.83	0274	2200
15:10:04	08.90	0282	2200
15:10:09	08.97	0290	2200
15:10:13	09.03	0299	2200
15:10:18	09.12	0307	2200
15:10:22	09.20	0315	2200
15:10:27	09.27	0323	2200
15:10:32	09.36	0331	2200
15:10:36	09.44	0338	2200
15:10:41	09.52	0346	2200
15:10:46	09.58	0353	2200
15:10:50	09.62	0361	2200
15:10:55	09.62	0370	2200
15:10:59	09.61	0379	2100
15:11:04	09.56	0389	2100
15:11:09	09.50	0396	2100
15:11:13	09.40	0403	2100
15:11:18	09.30	0409	2100
15:11:22	09.18	0411	2100
15:11:27	09.03	0413	2000
15:11:32	08.88	0414	2000
15:11:36	08.74	0411	2000
15:11:41	08.60	0406	2000
15:11:46	08.46	0403	1900
15:11:50	08.34	0398	1900
15:11:55	08.19	0391	1900
15:11:59	08.07	0388	1900
15:12:04	07.92	0380	1800
15:12:08	07.78	0376	
15:12:13	07.65	0369	1800
15:12:18	07.51	0363	1700
15:12:22	07.39	0356	1700
15:12:27	07.25	0348	1700
15:12:32	07.11	0340	1700
15:12:36	07.00	0332	1600
15:12:41	06.86	0324	1600
15:12:45	06.74	0319	1600
15:12:50	06.61	0313	1600
15:12:55	06.47	0310	1600
15:12:59	06.32	0308	1600
15:13:04	06.19	0307	1600
15:13:08	06.03	0308	1600
15:13:13	05.90	0308	1600
15:13:18	05.75	0306	1700
15:13:22	05.61	0303	1700
15:13:27	05.47	0299	1700
15:13:31	05.34	0295	1700
15:13:36	05.19	0290	1700
15:13:41	05.03	0286	1700
15:13:45	04.88	0282	1700
15:13:50	04.75	0279	1700
15:13:54	04.60	0278	1700
15:13:59	04.47	0277	1700
15:14:04	04.30	0276	1700
15:14:08	04.13	0276	1700
15:14:13	04.00	0272	1700
15:14:18	03.84	0268	1700
15:14:22	03.71	0264	1600
15:14:27	03.54	0263	1600
15:14:31	03.42	0264	1600
15:14:36	03.27	0264	1600
15:14:41	03.11	0262	1600
15:14:45	02.98	0260	1600
15:14:50	02.83	0257	1600
15:14:54	02.69	0248	1600

15:14:59	02.57	0240	1600
15:15:04	02.42	0226	1600
15:15:08	02.29	0217	1600
15:15:13	02.17	0202	1600
15:15:17	02.02	0188	1600
15:15:22	01.90	0174	1600
15:15:27	01.77	0159	1600
15:15:31	01.64	0136	1600
15:15:36	01.51	0116	1600
15:15:40	01.42	0076	1600
15:15:45	01.29	0038	1600
15:15:49	01.19	4081	1600
15:15:54	01.09	4025	1700
15:15:58	01.01	3960	1700
15:16:03	00.94	3873	1700
15:16:07	00.87	3788	1700
15:16:12	00.82	3677	1700
15:16:17	00.77	3553	1700
15:16:21	00.75	3436	1700
15:16:26	00.73	3305	1700
15:16:30	00.77	3169	1700
15:16:34	00.81	3050	1700
15:16:39	00.88	2961	1700
15:16:44	00.98	2879	1700
15:16:48	01.08	2810	1700
15:16:53	01.16	2758	1700
15:16:57	01.30	2707	1700
15:17:02	01.42	2679	1700
15:17:06	01.56	2650	1700
15:17:11	01.67	2628	1700
15:17:15	01.82	2610	1700
15:17:20	01.94	2593	1700
15:17:25	02.09	2578	1700
15:17:29	02.22	2567	1700
15:17:34	02.35	2552	1700
15:17:39	02.51	2544	1700
15:17:43	02.64	2538	1700
15:17:48	02.78	2531	1700
15:17:52	02.92	2528	1700
15:17:57	03.08	2523	1700
15:18:01	03.23	2516	1700
15:18:06	03.38	2512	1700
15:18:11	03.52	2508	1700
15:18:15	03.67	2503	1700
15:18:20	03.82	2500	1700
15:18:25	03.96	2493	1700
15:18:29	04.10	2490	1700
15:18:34	04.25	2486	1700
15:18:38	04.39	2481	1700
15:18:43	04.53	2476	1600
15:18:48	04.67	2471	1600
15:18:52	04.83	2469	1500
15:18:57	04.97	2465	1500
15:19:01	05.11	2464	1400
15:19:06	05.23	2461	1300
15:19:11	05.38	2461	1200
15:19:15	05.51	2460	1100
15:19:20	05.64	2460	1000
15:19:24	05.77	2459	900
15:19:29	05.92	2459	900
15:19:34	06.04	2459	800
15:19:38	06.17	2457	700
15:19:43	06.32	2457	600
15:19:48	06.43	2456	600
15:19:52	06.58	2456	600

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15:19:57	06.69	2455	500
15:20:01	06.83	2454	500
15:20:06	06.97	2453	600
15:20:11	07.08	2452	600

Table 3

N153ER_CONVRT.TXT

UTC TIME	Latitude			Longitude			Alt	Grndspd	East(X)	North(Y)	DIS RW23
HH:MM:SS	D	M	S	D	M	S	Feet	Knots	NM	NM	NM
14:22:20	29	10	51	081	02	44	200	93	7.7016	0.49357	13.99649809
14:22:25	29	10	53	081	02	36	300	84	7.81831	0.52697	14.11486679
14:22:30	29	10	55	081	02	29	300	58	7.92039	0.56035	14.22043713
14:22:34	29	10	56	081	02	24	400	79	7.99335	0.57707	14.29249308
14:22:39	29	10	59	081	02	18	500	94	8.08086	0.62706	14.39325442
14:22:44	29	11	00	081	02	10	500	73	8.19755	0.64384	14.50380926
14:22:48	29	11	02	081	02	04	600	75	8.28508	0.67721	14.59667728
14:22:53	29	11	04	081	01	58	600	73	8.37257	0.71057	14.68951559
14:22:57	29	11	06	081	01	52	700	84	8.4601	0.74395	14.78240865
14:23:02	29	11	08	081	01	45	800	68	8.56221	0.77734	14.88816357
14:23:07	29	11	09	081	01	39	800	73	8.64972	0.79409	14.97322325
14:23:11	29	11	10	081	01	33	900	92	8.73727	0.81084	15.05836495
14:23:16	29	11	12	081	01	25	900	84	8.85394	0.84426	15.17708837
14:23:20	29	11	14	081	01	18		68	8.95562	0.87762	15.28256847
14:23:25	29	11	14	081	01	12		71	9.04315	0.87774	15.36007844
14:23:30	29	11	12	081	01	06	1100	83	9.13121	0.84467	15.42285011
14:23:34	29	11	09	081	01	00	1200	86	9.21886	0.79493	15.47796955
14:23:39	29	11	05	081	00	54	1200	67	9.3065	0.72856	15.52604676
14:23:44	29	11	01	081	00	50	1200	90	9.36495	0.66214	15.54858534
14:23:48	29	10	57	081	00	44	1300	84	9.45264	0.59578	15.59788011
14:23:53	29	10	53	081	00	38	1400	77	9.54032	0.52941	15.64777909
14:24:02	29	10	45	081	00	28	1500	77	9.68648	0.39664	15.7229341
14:24:06	29	10	41	081	00	23	1500	97	9.75954	0.33025	15.76128466
14:24:11	29	10	37	081	00	16	1600	77	9.86182	0.26391	15.82679781
14:24:16	29	10	34	081	00	10	1600	77	9.94945	0.21418	15.88635151
14:24:20	29	10	30	081	00	05	1700	92	10.02256	0.14779	15.92632135
14:24:25	29	10	25	080	59	59	1700	82	10.11024	0.06481	15.97359979
14:24:29	29	10	22	080	59	53	1700	82	10.19787	0.01507	16.03457953
14:24:34	29	10	18	080	59	47	1800	86	10.28558	-0.05129	16.08961307
14:24:39	29	10	14	080	59	41	1800	81	10.37324	-0.11764	16.14516585
14:24:43	29	10	10	080	59	36	1900	91	10.44636	-0.18402	16.18778475
14:24:48	29	10	06	080	59	29	1900	69	10.54862	-0.25035	16.25798435
14:24:53	29	10	03	080	59	24	2000	94	10.62171	-0.30011	16.30767321
14:24:57	29	09	58	080	59	18	2000	81	10.70941	-0.38309	16.35935191
14:25:02	29	09	55	080	59	12	2100	89	10.79711	-0.43282	16.42352213
14:25:07	29	09	50	080	59	06	2100	73	10.88481	-0.51579	16.47644298
14:25:11	29	09	47	080	59	01	2200	86	10.95791	-0.56554	16.52777385
14:25:16	29	09	43	080	58	55	2300	88	11.04564	-0.6319	16.58753224
14:25:20	29	09	38	080	58	50	2300	66	11.11876	-0.7149	16.62847741
14:25:25	29	09	35	080	58	45	2300	92	11.19182	-0.76464	16.68092506
14:25:30	29	09	30	080	58	39	2400	88	11.27958	-0.84762	16.73679903
14:25:34	29	09	26	080	58	33	2400	79	11.36727	-0.91396	16.79857662
14:25:39	29	09	22	080	58	28	2500	92	11.44042	-0.98034	16.847024
14:25:44	29	09	17	080	58	22	2500	79	11.52814	-1.06331	16.90466348
14:25:48	29	09	14	080	58	16	2500	97	11.6158	-1.11302	16.9729639
14:25:53	29	09	09	080	58	10	2500	100	11.70352	-1.19599	17.03172683
14:25:57	29	09	04	080	58	03	2500	95	11.80585	-1.27893	17.105126
14:26:02	29	09	00	080	57	56	2500	99	11.90814	-1.34524	17.18393127
14:26:07	29	08	55	080	57	50	2500	95	11.99587	-1.4282	17.24459218
14:26:11	29	08	51	080	57	43	2500	103	12.09817	-1.4945	17.32446873
14:26:16	29	08	46	080	57	36	2500	101	12.2005	-1.57744	17.40037699
14:26:20	29	08	41	080	57	29	2500	100	12.30284	-1.66036	17.47696325
14:26:25	29	08	36	080	57	22	2600	111	12.40523	-1.7433	17.55424688
14:26:30	29	08	30	080	57	15	2600	108	12.50761	-1.84285	17.62799829
14:26:34	29	08	25	080	57	08	2500	112	12.60989	-1.92577	17.70655989
14:26:39	29	08	20	080	57	00	2500	106	12.72684	-2.00866	17.80000171
14:26:43	29	08	14	080	56	54	2600	107	12.81469	-2.10825	17.86191721
14:26:48	29	08	09	080	56	46	2600	105	12.93164	-2.19114	17.95672682
14:26:53	29	08	03	080	56	40	2600	105	13.01943	-2.29071	18.02005669
14:26:57	29	07	59	080	56	32	2500	109	13.13629	-2.35696	18.11968356
14:27:02	29	07	53	080	56	25	2500	117	13.23868	-2.4565	18.19862567
14:27:06	29	07	48	080	56	17	2500	103	13.35564	-2.53938	18.2959904
14:27:11	29	07	42	080	56	11	2500	75	13.44345	-2.63895	18.3620855

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14:27:16	29 07 38	080 56 06		182	13.51497	-2.70497	18.41935443
14:27:20	29 07 24	080 56 07	2400	107	13.50243	-2.93808	18.36346487
14:27:25	29 07 16	080 56 10	2400	101	13.45893	-3.07119	18.29702319
14:27:30	29 07 09	080 56 14	2400	141	13.40079	-3.1877	18.21977315
14:27:34	29 07 01	080 56 22	2400	100	13.28428	-3.32096	18.08281143
14:27:39	29 06 57	080 56 30	2500	137	13.16769	-3.38773	17.95698319
14:27:44	29 06 52	080 56 40	2400	108	13.0218	-3.47115	17.79972921
14:27:48	29 06 48	080 56 48	2400	120	12.90514	-3.5379	17.67411841
14:27:53	29 06 44	080 56 58	2400	125	12.75928	-3.60471	17.51976538
14:27:57	29 06 40	080 57 08	2400	108	12.61341	-3.67152	17.36551268
14:28:02	29 06 38	080 57 17	2400	120	12.48207	-3.70504	17.23064959
14:28:07	29 06 35	080 57 27	2400	118	12.33617	-3.75521	17.07894769
14:28:11	29 06 32	080 57 37	2400	117	12.19026	-3.80538	16.92728259
14:28:16	29 06 30	080 57 47	2400	117	12.04432	-3.83892	16.77802649
14:28:20	29 06 26	080 57 56	2300	120	11.91298	-3.90566	16.63849975
14:28:25	29 06 23	080 58 06	2400	107	11.76712	-3.95584	16.48703411
14:28:30	29 06 20	080 58 15	2400	124	11.63581	-4.00596	16.35003991
14:28:34	29 06 15	080 58 24	2400	97	11.50455	-4.08934	16.20867034
14:28:39	29 06 12	080 58 32	2500	115	11.38789	-4.13946	16.08638713
14:28:44	29 06 08	080 58 41	2500	124	11.25659	-4.2062	15.94751279
14:28:48	29 06 03	080 58 50	2500	105	11.12533	-4.28957	15.80674975
14:28:53	29 05 59	080 58 58	2500	118	11.00863	-4.35629	15.68273099
14:28:58	29 05 56	080 59 08	2500	103	10.8627	-4.40642	15.53182988
14:29:02	29 05 51	080 59 15	2500	112	10.76062	-4.48973	15.42070268
14:29:07	29 05 48	080 59 24	2500	129	10.62929	-4.53984	15.28452988
14:29:11	29 05 42	080 59 33	2500	101	10.49803	-4.63982	15.14309312
14:29:16	29 05 37	080 59 40	2500	101	10.39595	-4.72313	15.03286203
14:29:21	29 05 34	080 59 48	2500	132	10.27921	-4.7732	14.9116653
14:29:25	29 05 28	080 59 57	2500	112	10.14795	-4.87318	14.77134872
14:29:30	29 05 24	081 00 06	2500	121	10.01663	-4.9399	14.63444811
14:29:34	29 05 19	081 00 15	2500	103	9.88533	-5.02324	14.49634488
14:29:39	29 05 14	081 00 22	2600	121	9.78328	-5.10656	14.38775515
14:29:44	29 05 09	081 00 31	2600	108	9.65197	-5.1899	14.25037593
14:29:48	29 05 05	081 00 39	2600	125	9.53524	-5.25658	14.12909002
14:29:53	29 05 01	081 00 49	2600	102	9.3893	-5.32331	13.97889615
14:29:58	29 04 57	081 00 57	2600	132	9.27256	-5.39	13.8580781
14:30:02	29 04 53	081 01 07	2600	117	9.12661	-5.45672	13.70835151
14:30:07	29 04 49	081 01 17	2600	105	8.98066	-5.52344	13.55887088
14:30:11	29 04 45	081 01 25	2600	126	8.86392	-5.59011	13.43882063
14:30:16	29 04 42	081 01 35	2500	122	8.7179	-5.64017	13.29055841
14:30:21	29 04 38	081 01 45	2500	120	8.57194	-5.70688	13.14178647
14:30:25	29 04 35	081 01 55	2500		8.42595	-5.75696	12.99389528
14:30:30	29 04 32	081 02 03		147	8.30818	-5.8063	12.87438439
14:30:35	29 04 30	081 02 16	2400	117	8.1193	-5.84048	12.684449
14:30:39	29 04 29	081 02 26	2400	126	7.97327	-5.85729	12.53794952
14:30:44	29 04 28	081 02 37	2400	112	7.81263	-5.87412	12.37685819
14:30:48	29 04 27	081 02 47	2500	128	7.66663	-5.89096	12.23041123
14:30:53	29 04 25	081 02 58	2500	122	7.506	-5.92441	12.06888109
14:30:57	29 04 23	081 03 08	2500	123	7.35998	-5.95784	11.9220264
14:31:02	29 04 22	081 03 19	2500	120	7.19934	-5.97465	11.76101985
14:31:07	29 04 19	081 03 29	2500	123	7.05333	-6.0247	11.61393524
14:31:12	29 04 19	081 03 40	2500	130	6.89267	-6.02488	11.45330474
14:31:16	29 04 17	081 03 51	2500	113	6.73203	-6.05831	11.29205496
14:31:21	29 04 13	081 04 00	2500	117	6.60065	-6.12496	11.15969597
14:31:25	29 04 08	081 04 08	2500	121	6.48388	-6.20822	11.04223713
14:31:30	29 04 03	081 04 17	2500	108	6.35251	-6.29148	10.91079811
14:31:35	29 03 57	081 04 24	2500	105	6.25036	-6.39135	10.8094093
14:31:39	29 03 50	081 04 29	2500	114	6.17745	-6.5078	10.73857073
14:31:44	29 03 43	081 04 35	2500	124	6.08992	-6.62427	10.65442045
14:31:48	29 03 34	081 04 38	2500		6.04624	-6.77395	10.61697166
14:31:53	29 03 27	081 04 41	2500	118	6.00253	-6.89038	10.57962205
14:31:58	29 03 18	081 04 44	2500	101	5.95885	-7.04006	10.54604721
14:32:02	29 03 11	081 04 48	2500	125	5.90053	-7.1565	10.49720118
14:32:07	29 03 02	081 04 51	2500	104	5.85684	-7.30618	10.46758376
14:32:12	29 02 54	081 04 54	2500	108	5.81314	-7.43923	10.43830815

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14:32:16	29 02 46	081 04 56	2500	119	5.78404	-7.57227	10.42531647
14:32:21	29 02 37	081 04 58	2500	97	5.75496	-7.72193	10.4164305
14:32:25	29 02 30	081 05 01	2500	107	5.71124	-7.83836	10.39020427
14:32:30	29 02 22	081 05 02	2500	112	5.69675	-7.97138	10.39696067
14:32:35	29 02 13	081 05 03	2500	108	5.68228	-8.12103	10.40841523
14:32:39	29 02 05	081 05 05	2500	109	5.65318	-8.25407	10.40447421
14:32:44	29 01 57	081 05 08	2500	115	5.60947	-8.38712	10.38801622
14:32:49	29 01 48	081 05 09	2500	104	5.59499	-8.53677	10.40557308
14:32:53	29 01 40	081 05 10	2500	106	5.5805	-8.66979	10.42139969
14:32:58	29 01 32	081 05 12	2500	119	5.55139	-8.80283	10.42474378
14:33:02	29 01 23	081 05 13	2500	106	5.53691	-8.95247	10.44827274
14:33:07	29 01 15	081 05 15	2500	90	5.50781	-9.08551	10.45533687
14:33:12	29 01 08	081 05 16	2500	134	5.4933	-9.20191	10.47347625
14:33:16	29 00 58	081 05 19	2500	106	5.4496	-9.36821	10.47967322
14:33:21	29 00 50	081 05 20	2500	106	5.4351	-9.50123	10.50611116
14:33:25	29 00 42	081 05 22	2500	104	5.40599	-9.63427	10.52035109
14:33:30	29 00 34	081 05 22	2500	121	5.40611	-9.76728	10.5638884
14:33:35	29 00 25	081 05 25	2500	107	5.36239	-9.91695	10.57350049
14:33:39	29 00 17	081 05 26	2500	106	5.34789	-10.04997	10.60670819
14:33:44	29 00 09	081 05 29	2500	104	5.30416	-10.18302	10.61434119
14:33:49	29 00 01	081 05 29	2500	104	5.30427	-10.31603	10.66433058
14:33:53	28 59 53	081 05 31	2500	109	5.27515	-10.44906	10.68884892
14:33:58	28 59 45	081 05 34	2500	124	5.23142	-10.58211	10.70168357
14:34:02	28 59 36	081 05 36	2500	108	5.20231	-10.73177	10.73654005
14:34:07	28 59 28	081 05 40	2500	106	5.14395	-10.86483	10.73989869
14:34:12	28 59 20	081 05 41	2500	113	5.12944	-10.99785	10.78457625
14:34:16	28 59 12	081 05 45	2500	112	5.07108	-11.13091	10.7915954
14:34:21	28 59 04	081 05 48	2500	109	5.02733	-11.26396	10.81350896
14:34:25	28 58 56	081 05 51	2500	113	4.98358	-11.397	10.83718371
14:34:30	28 58 48	081 05 55	2500	116	4.92521	-11.53006	10.8498412
14:34:35	28 58 39	081 05 57	2500	113	4.89609	-11.67972	10.89805917
14:34:39	28 58 31	081 06 01	2500	163	4.83772	-11.81277	10.9145562
14:34:44	28 58 22	081 06 11		67	4.69107	-11.96108	10.86565872
14:34:49	28 58 17	081 06 13	2500	106	4.66246	-12.04567	10.88604301
14:34:53	28 58 11	081 06 19	2500	138	4.57481	-12.14549	10.86565345
14:34:58	28 58 05	081 06 29	2500	121	4.42867	-12.24536	10.7981526
14:35:02	28 58 00	081 06 38	2500	120	4.29714	-12.32858	10.73576198
14:35:07	28 57 54	081 06 46	2500	118	4.18024	-12.42842	10.69681208
14:35:12	28 57 50	081 06 55	2500	109	4.04869	-12.49501	10.62854962
14:35:16	28 57 45	081 07 03	2500	125	3.93177	-12.57822	10.58356273
14:35:21	28 57 41	081 07 13	2500	125	3.7856	-12.64481	10.50700783
14:35:26	28 57 37	081 07 23	2500	97	3.63942	-12.7114	10.43235653
14:35:30	28 57 32	081 07 29	2500	140	3.55173	-12.79459	10.41558949
14:35:35	28 57 28	081 07 41	2500		3.3763	-12.86119	10.32205316
14:35:39	28 57 25	081 07 49	2500	154	3.25935	-12.91113	10.26472029
14:35:44	28 57 20	081 08 01	2500	105	3.08392	-12.99435	10.18658291
14:35:49	28 57 16	081 08 09	2500	115	2.96697	-13.06091	10.14365205
14:35:53	28 57 12	081 08 18	2500	118	2.8354	-13.12748	10.09162182
14:35:58	28 57 08	081 08 27	2500	118	2.70382	-13.19404	10.04147328
14:36:02	28 57 03	081 08 36	2500	120	2.57225	-13.27723	10.00491465
14:36:07	28 57 00	081 08 46	2500	136	2.42603	-13.32717	9.936695813
14:36:12	28 56 56	081 08 57	2500	115	2.2652	-13.39373	9.872313004
14:36:16	28 56 52	081 09 06	2500	118	2.13361	-13.46028	9.83046987
14:36:21	28 56 49	081 09 16	2500	112	1.98739	-13.51021	9.768528977
14:36:26	28 56 46	081 09 25	2500	125	1.85579	-13.56013	9.718287501
14:36:30	28 56 42	081 09 35	2500	131	1.70957	-13.62668	9.67300222
14:36:35	28 56 39	081 09 46	2400	121	1.5487	-13.67653	9.607980051
14:36:40	28 56 35	081 09 56	2400	113	1.40248	-13.74307	9.567668955
14:36:44	28 56 31	081 10 05	2500	126	1.27088	-13.80967	9.538870443
14:36:49	28 56 28	081 10 15	2500	107	1.12464	-13.85958	9.490138321
14:36:53	28 56 25	081 10 24	2500	129	0.99303	-13.90948	9.452259982
14:36:58	28 56 20	081 10 34	2500	120	0.84679	-13.99263	9.435154737
14:37:03	28 56 17	081 10 44	2500	127	0.70054	-14.04252	9.393439483
14:37:07	28 56 12	081 10 53	2500	112	0.56893	-14.12567	9.389947307
14:37:12	28 56 10	081 11 03	2500		0.42267	-14.15893	9.339009286

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14:37:16	28 56 06	081 11 10	2500	139	0.3203	-14.22544	9.341469059
14:37:21	28 56 03	081 11 22	2500	114	0.14479	-14.27533	9.294017175
14:37:26	28 56 00	081 11 31	2500	131	0.01316	-14.32521	9.27146974
14:37:30	28 55 58	081 11 42	2500	108	-0.14772	-14.35846	9.222398986
14:37:35	28 55 59	081 11 52	2500	128	-0.29398	-14.34183	9.138641087
14:37:40	28 56 01	081 12 03	2500	125	-0.45486	-14.30857	9.035043812
14:37:44	28 56 04	081 12 13	2500	126	-0.60111	-14.25867	8.924814732
14:37:49	28 56 09	081 12 23	2500	141	-0.74736	-14.17553	8.785953959
14:37:53	28 56 16	081 12 32	2500	100	-0.87897	-14.05913	8.624256938
14:37:58	28 56 21	081 12 39	2500	124	-0.98134	-13.97598	8.505572245
14:38:03	28 56 29	081 12 45	2500	120	-1.06906	-13.84296	8.348030482
14:38:07	28 56 36	081 12 52	2500	118	-1.17141	-13.72656	8.199626516
14:38:12	28 56 43	081 12 58	2400	145	-1.25913	-13.61009	8.057386351
14:38:16	28 56 52	081 13 05	2400	121	-1.36147	-13.46044	7.879017977
14:38:21	28 57 00	081 13 11	2300	107	-1.44917	-13.32734	7.721827225
14:38:26	28 57 07	081 13 16	2300	137	-1.52226	-13.21094	7.585877142
14:38:30	28 57 16	081 13 21	2200	116	-1.59533	-13.06123	7.419439352
14:38:35	28 57 24	081 13 27	2100	124	-1.68302	-12.92814	7.262454911
14:38:40	28 57 32	081 13 33	2100	124	-1.77072	-12.79511	7.105628467
14:38:44	28 57 40	081 13 38	2000	113	-1.84378	-12.66202	6.954562081
14:38:49	28 57 48	081 13 42	1900	126	-1.90221	-12.52893	6.809222744
14:38:53	28 57 57	081 13 47	1900	123	-1.97527	-12.37928	6.642934748
14:38:58	28 58 05	081 13 53	1800	123	-2.06294	-12.24619	6.486293876
14:39:03	28 58 14	081 13 56	1800	118	-2.10675	-12.09654	6.331330229
14:39:07	28 58 22	081 14 01	1700	109	-2.17979	-11.96345	6.180360952
14:39:12	28 58 30	081 14 04	1700	133	-2.22361	-11.83043	6.040731583
14:39:16	28 58 39	081 14 09	1600	118	-2.29664	-11.68072	5.874437407
14:39:21	28 58 48	081 14 12	1600	109	-2.34044	-11.53108	5.719494806
14:39:26	28 58 56	081 14 15	1500	115	-2.38423	-11.398	5.579858264
14:39:30	28 59 04	081 14 18		114	-2.42786	-11.26417	5.43961808
14:39:35	28 59 13	081 14 17	1400	109	-2.41334	-11.1153	5.308810479
14:39:40	28 59 21	081 14 20	1400	128	-2.45714	-10.98229	5.169461666
14:39:44	28 59 31	081 14 22	1300	116	-2.4863	-10.81597	5.005814802
14:39:49	28 59 40	081 14 23	1300	110	-2.50086	-10.66634	4.863820841
14:39:53	28 59 48	081 14 25	1200	117	-2.53002	-10.53327	4.731001641
14:39:58	28 59 57	081 14 26	1200	103	-2.54458	-10.38364	4.589860759
14:40:03	29 00 05	081 14 28	1100	120	-2.57374	-10.25058	4.45761287
14:40:07	29 00 14	081 14 28	1100	106	-2.57368	-10.10095	4.324169688
14:40:12	29 00 22	081 14 30	1100	104	-2.60285	-9.96794	4.192754769
14:40:16	29 00 30	081 14 31		104	-2.61727	-9.83441	4.068212034
14:40:21	29 00 38	081 14 32	1000	117	-2.63196	-9.70188	3.945050884
14:40:26	29 00 47	081 14 31	1000	106	-2.61728	-9.55226	3.822611703
14:40:30	29 00 55	081 14 33		107	-2.64632	-9.41879	3.693129482
14:40:35	29 01 03	081 14 34		117	-2.66088	-9.28579	3.572246967
14:40:39	29 01 12	081 14 34		113	-2.66081	-9.13617	3.446431121
14:40:44	29 01 21	081 14 35	900	105	-2.67547	-8.98694	3.314520034
14:40:49	29 01 29	081 14 35	900	107	-2.67542	-8.85394	3.205980283
14:40:53	29 01 37	081 14 36	900	108	-2.68997	-8.72093	3.090491582
14:40:58	29 01 46	081 14 37		114	-2.7044	-8.57093	2.96333818
14:41:03	29 01 54	081 14 38	900	116	-2.71907	-8.43829	2.851578951
14:41:07	29 02 03	081 14 40	900	117	-2.74822	-8.28866	2.719442475
14:41:12	29 02 12	081 14 39	900	91	-2.73355	-8.13904	2.619874653
14:41:17	29 02 19	081 14 38	900	117	-2.71889	-8.02267	2.548226464
14:41:21	29 02 28	081 14 37	1000		-2.70422	-7.87309	2.458133121
14:41:26	29 02 35	081 14 34	1000		-2.66035	-7.75673	2.41763148
14:41:30	29 02 42	081 14 31	1000	100	-2.61647	-7.64037	2.382946243
14:41:35	29 02 49	081 14 27	1000	111	-2.55798	-7.52402	2.366667123
14:41:39	29 02 57	081 14 24	1100	86	-2.51412	-7.39108	2.336632315
14:41:44	29 03 03	081 14 20	1100	116	-2.45564	-7.29135	2.342329634
14:41:49	29 03 11	081 14 16	1100	96	-2.39716	-7.15837	2.340724091
14:41:54	29 03 18	081 14 12	1200	100	-2.33869	-7.04205	2.353602393
14:41:58	29 03 25	081 14 09	1200	116	-2.29483	-6.92569	2.359532522
14:42:03	29 03 33	081 14 05	1200	97	-2.23635	-6.79271	2.382421908
14:42:07	29 03 40	081 14 02	1200	109	-2.19249	-6.67635	2.40226712
14:42:12	29 03 47	081 13 57	1200	123	-2.11941	-6.56	2.457324687

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14:42:16	29 03 56	081 13 53	1200	93	-2.06094	-6.41039	2.501879695
14:42:21	29 04 03	081 13 52	1200	119	-2.04629	-6.29402	2.512192987
14:42:26	29 04 12	081 13 50	1300	104	-2.01704	-6.14443	2.543784987
14:42:30	29 04 20	081 13 49	1300	117	-2.00239	-6.01143	2.567820038
14:42:35	29 04 29	081 13 49	1300	115	-2.00234	-5.8618	2.58659162
14:42:40	29 04 38	081 13 50	1300	117	-2.0169	-5.71217	2.599522945
14:42:44	29 04 47	081 13 51	1300	115	-2.03145	-5.56254	2.621037137
14:42:49	29 04 56	081 13 53	1300	110	-2.06061	-5.4129	2.63707721
14:42:53	29 05 04	081 13 55	1300	121	-2.08978	-5.27988	2.655584194
14:42:58	29 05 13	081 13 58	1300	138	-2.13353	-5.13024	2.674602462
14:43:02	29 05 23	081 14 00	1300	113	-2.16268	-4.96398	2.723231853
14:43:07	29 05 32	081 14 03	1300	124	-2.20644	-4.81433	2.760120614
14:43:12	29 05 41	081 14 05	1300	134	-2.23559	-4.66469	2.817229578
14:43:16	29 05 51	081 14 08	1300	117	-2.27933	-4.49842	2.879818471
14:43:21	29 06 00	081 14 10	1200	121	-2.30847	-4.34876	2.951404336
14:43:26	29 06 09	081 14 12	1300	114	-2.33763	-4.19914	3.028937367
14:43:31	29 06 18	081 14 14		125	-2.36662	-4.04925	3.112321779
14:43:35	29 06 27	081 14 17	1200	130	-2.4105	-3.89984	3.190423245
14:43:40	29 06 36	081 14 22	1300	124	-2.48346	-3.7502	3.255639861
14:43:44	29 06 44	081 14 28	1300	118	-2.571	-3.61716	3.305883256
14:43:49	29 06 52	081 14 33	1300	113	-2.64394	-3.48413	3.371185547
14:43:53	29 06 59	081 14 39	1300	133	-2.73149	-3.36771	3.420092987
14:43:58	29 07 07	081 14 46	1200	125	-2.8336	-3.23465	3.481603073
14:44:03	29 07 15	081 14 53	1200	128	-2.93573	-3.1016	3.549960373
14:44:07	29 07 22	081 15 01	1200	120	-3.05246	-2.98516	3.603598975
14:44:12	29 07 28	081 15 09	1200	121	-3.16919	-2.88535	3.64849476
14:44:17	29 07 33	081 15 18	1100	135	-3.30051	-2.80214	3.678630033
14:44:21	29 07 37	081 15 29	1100	115	-3.46105	-2.73555	3.690405067
14:44:26	29 07 41	081 15 38	1100	123	-3.59239	-2.66898	3.717752578
14:44:31	29 07 42	081 15 49	1100	117	-3.75295	-2.65226	3.695624778
14:44:35	29 07 44	081 15 59	1100	117	-3.8989	-2.61892	3.699391039
14:44:40	29 07 42	081 16 09	1100	117	-4.04489	-2.65207	3.643356881
14:44:45	29 07 40	081 16 19	1100	125	-4.19089	-2.68523	3.592680037
14:44:49	29 07 36	081 16 29	1000	118	-4.33689	-2.75161	3.514447556
14:44:54	29 07 32	081 16 38	1000	107	-4.46831	-2.81802	3.442234932
14:44:59	29 07 27	081 16 46	1000	127	-4.58515	-2.90106	3.358127822
14:45:03	29 07 22	081 16 55	1000	108	-4.7166	-2.98409	3.278816462
14:45:08	29 07 16	081 17 02	1000	120	-4.81886	-3.08376	3.185997471
14:45:12	29 07 10	081 17 10	1000	123	-4.93573	-3.18342	3.098738959
14:45:17	29 07 04	081 17 18	1000	111	-5.0526	-3.28308	3.016781034
14:45:21	29 06 58	081 17 25	1000	138	-5.15487	-3.38274	2.937566876
14:45:26	29 06 50	081 17 33	1000	97	-5.27177	-3.51565	2.834701611
14:45:31	29 06 43	081 17 36	1000	104	-5.31567	-3.63198	2.734109474
14:45:35	29 06 35	081 17 37	900	134	-5.33036	-3.76495	2.610910522
14:45:40	29 06 25	081 17 38	900	86	-5.34511	-3.93119	2.457282289
14:45:45	29 06 18	081 17 37	900	129	-5.33061	-4.04758	2.342496033
14:45:49	29 06 09	081 17 39	900	113	-5.35994	-4.19718	2.212273604
14:45:54	29 06 02	081 17 45	1000	109	-5.44767	-4.3135	2.139244554
14:45:58	29 05 56	081 17 52	1000	113	-5.54997	-4.41316	2.095459148
14:46:03	29 05 50	081 17 59	1000	110	-5.65227	-4.51282	2.060661454
14:46:07	29 05 47	081 18 08	1000	101	-5.78373	-4.56257	2.092838245
14:46:12	29 05 46	081 18 17	1000	120	-5.91516	-4.57907	2.15955215
14:46:17	29 05 40	081 18 25		83	-6.03178	-4.67849	2.160922229
14:46:21	29 05 34	081 18 23	1000	90	-6.00297	-4.77849	2.068669022
14:46:26	29 05 28	081 18 19	900	101	-5.94462	-4.87827	1.956702778
14:46:30	29 05 21	081 18 15	800	118	-5.8863	-4.99468	1.833698646
14:46:35	29 05 13	081 18 10	800	90	-5.81341	-5.12775	1.689780843
14:46:40	29 05 07	081 18 06	700	112	-5.75507	-5.22753	1.580030839
14:46:44	29 04 59	081 18 04	700	89	-5.72598	-5.36056	1.473416064
14:46:49	29 04 52	081 18 03	700	109	-5.71149	-5.47694	1.3934592
14:46:53	29 04 44	081 18 06	700	96	-5.75542	-5.6099	1.361864393
14:46:58	29 04 38	081 18 11	700	108	-5.82854	-5.70958	1.38405648
14:47:03	29 04 34	081 18 19	700	86	-5.94543	-5.77597	1.468908223
14:47:07	29 04 31	081 18 26	700		-6.04771	-5.82575	1.551223959
14:47:12	29 04 28	081 18 34	900		-6.16466	-5.87556	1.651566773

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14:47:17	29 04 25	081 18 42	800	84	-6.28152	-5.92529	1.755309011
14:47:21	29 04 23	081 18 49	900	84	-6.38381	-5.95847	1.850154641
14:47:26	29 04 21	081 18 56	900		-6.48608	-5.99161	1.946306057
14:47:30	29 04 18	081 19 04	900	95	-6.60298	-6.04136	2.056298535
14:47:35	29 04 16	081 19 12	900	84	-6.71985	-6.07449	2.169477186
14:47:40	29 04 14	081 19 19	900	102	-6.82213	-6.10762	2.268950873
14:47:44	29 04 09	081 19 26	900	80	-6.92446	-6.19064	2.367209564
14:47:49	29 04 04	081 19 30		66	-6.98267	-6.27342	2.424472409
14:47:53	29 03 59	081 19 30	800	79	-6.98303	-6.35679	2.426757876
14:47:58	29 03 53	081 19 29	800	80	-6.96854	-6.45656	2.418376406
14:48:03	29 03 47	081 19 28	800	72	-6.95405	-6.55632	2.414178364
14:48:07	29 03 42	081 19 25	700\	58	-6.91029	-6.63946	2.382609525
14:48:12	29 03 38	081 19 23	700	56	-6.88115	-6.706	2.365512282
14:48:17	29 03 34	081 19 21	700	70	-6.85201	-6.77253	2.350534347
14:48:21	29 03 30	081 19 17	700	60	-6.79366	-6.83909	2.30944023
14:48:26	29 03 27	081 19 13	700	88	-6.73528	-6.88903	2.266349524
14:48:30	29 03 21	081 19 09	600	52	-6.67693	-6.98881	2.240837609
14:48:35	29 03 18	081 19 06	600	81	-6.63316	-7.03873	2.216562007
14:48:39	29 03 14	081 19 01	600	60	-6.5602	-7.10531	2.173464758
14:48:44	29 03 11	081 18 57	600	77	-6.50182	-7.15524	2.140235025
14:48:49	29 03 07	081 18 52	600	60	-6.42885	-7.22182	2.103817977
14:48:53	29 03 04	081 18 48	500	67	-6.37044	-7.27172	2.075935599
14:48:58	29 03 01	081 18 43	500	61	-6.29746	-7.32167	2.038132409
14:49:02	29 02 58	081 18 39	500	63	-6.23907	-7.3716	2.015661241
14:49:07	29 02 56	081 18 34	500	68	-6.16607	-7.40492	1.974352201
14:49:12	29 02 56	081 18 28	500	68	-6.07842	-7.40501	1.903707645
14:49:16	29 02 56	081 18 22	400	70	-5.99074	-7.40506	1.8344826
14:49:21	29 02 57	081 18 16		63	-5.90297	-7.38838	1.756023138
14:49:26	29 02 59	081 18 11	400	47	-5.83001	-7.35534	1.679042858
14:49:30	29 03 00	081 18 07		88	-5.77145	-7.33863	1.623978666
14:49:35	29 03 04	081 18 01	300	50	-5.68383	-7.27232	1.514466291
14:49:39	29 03 07	081 17 58	300	64	-5.63996	-7.22249	1.448543056
14:49:44	29 03 11	081 17 55		69	-5.59599	-7.15592	1.371585596
14:49:49	29 03 14	081 17 50		52	-5.52291	-7.10612	1.283769828
14:49:53	29 03 16	081 17 46		70	-5.46446	-7.07292	1.218018979
14:50:07	29 03 24	081 17 30		43	-5.23063	-6.94013	0.957046193
14:50:58	29 03 51	081 17 02		83	-4.8213	-6.4916	0.351092743
14:51:03	29 03 55	081 16 56	300	54	-4.73368	-6.42527	0.241657422
14:51:07	29 03 57	081 16 52	400	95	-4.67525	-6.39209	0.177152477
14:51:12	29 04 01	081 16 45	400	60	-4.57297	-6.32567	0.068199714
14:51:16	29 04 04	081 16 41	400	79	-4.51451	-6.27584	0.046831725
14:51:21	29 04 07	081 16 35	500	81	-4.42686	-6.22606	0.135465954
14:51:25	29 04 10	081 16 29	500	93	-4.33919	-6.17625	0.234187343
14:51:30	29 04 14	081 16 22	500	90	-4.23691	-6.10982	0.354304271
14:51:35	29 04 18	081 16 16	600	93	-4.14926	-6.04341	0.462361535
14:51:39	29 04 22	081 16 09	700	81	-4.047	-5.97701	0.583891961
14:51:44	29 04 27	081 16 05	700	77	-3.98853	-5.89392	0.676691443
14:51:48	29 04 33	081 16 04	800	104	-3.97388	-5.79421	0.746713283
14:51:53	29 04 41	081 16 05	800	96	-3.98839	-5.6612	0.825947648
14:51:58	29 04 47	081 16 10	900	94	-4.06137	-5.56143	0.856501792
14:52:02	29 04 52	081 16 16	900	95	-4.14894	-5.47824	0.881610796
14:52:07	29 04 56	081 16 23	1000	96	-4.25114	-5.4117	0.901311974
14:52:12	29 04 59	081 16 31	1000	95	-4.36793	-5.36174	0.917298736
14:52:16	29 04 58	081 16 39	1000	111	-4.48477	-5.37828	0.883858858
14:52:21	29 04 54	081 16 48	1000	89	-4.61626	-5.44469	0.816454158
14:52:25	29 04 50	081 16 54	1000	108	-4.70393	-5.51112	0.762016888
14:52:30	29 04 44	081 17 01	1000	114	-4.80623	-5.6108	0.694093653
14:52:35	29 04 37	081 17 07	1000	108	-4.89395	-5.7271	0.629050017
14:52:39	29 04 32	081 17 14	1000	93	-4.99625	-5.81015	0.627208821
14:52:44	29 04 26	081 17 19	1000	115	-5.06935	-5.90984	0.619033125
14:52:48	29 04 20	081 17 26	1000	101	-5.17167	-6.0095	0.662258666
14:52:53	29 04 15	081 17 33	1000	101	-5.27398	-6.09254	0.734860068
14:52:58	29 04 09	081 17 39	1000	118	-5.3617	-6.19222	0.806237081
14:53:02	29 04 03	081 17 46	1000	93	-5.46403	-6.29188	0.906383674
14:53:07	29 03 59	081 17 53	1000		-5.56633	-6.35829	1.012960055

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14:53:12	29 03 54	081 18 00	1000	116	-5.66864	-6.44132	1.125255339
14:53:16	29 03 49	081 18 08	1000	86	-5.78557	-6.52434	1.255667869
14:53:21	29 03 44	081 18 13	1000	102	-5.85868	-6.6074	1.346280437
14:53:25	29 03 41	081 18 21	1000	107	-5.97558	-6.65716	1.472182177
14:53:30	29 03 35	081 18 28	1000	93	-6.07793	-6.75681	1.599122525
14:53:35	29 03 32	081 18 35	1000	82	-6.18022	-6.80658	1.711892336
14:53:39	29 03 27	081 18 40	900	90	-6.25331	-6.8896	1.808540233
14:53:44	29 03 21	081 18 44	900	110	-6.31184	-6.98929	1.899557739
14:53:48	29 03 13	081 18 45		52	-6.32632	-7.12197	1.967405916
14:53:53	29 03 09	081 18 44		105	-6.31178	-7.18848	1.984612529
14:53:58	29 03 04	081 18 37	800	184	-6.20985	-7.27199	1.937473164
14:54:02	29 02 54	081 18 26		37	-6.04909	-7.43811	1.900722353
14:54:07	29 02 57	081 18 26	700	84	-6.04924	-7.38849	1.870467307
14:54:11	29 02 56	081 18 19	700	47	-5.947	-7.40521	1.800629977
14:54:16	29 02 57	081 18 15		95	-5.88836	-7.38839	1.74486684
14:54:21	29 03 01	081 18 08	600	97	-5.78621	-7.3222	1.624233498
14:54:25	29 03 05	081 18 01	500	69	-5.68386	-7.25576	1.503459812
14:54:30	29 03 09	081 17 57	500	79	-5.62537	-7.18932	1.415666943
14:54:35	29 03 12	081 17 51	400	51	-5.53766	-7.13949	1.316960631
14:54:39	29 03 15	081 17 48		70	-5.49368	-7.08952	1.250871131
14:54:44	29 03 18	081 17 43		77	-5.42061	-7.03971	1.163213314
14:54:48	29 03 22	081 17 38		79	-5.34751	-6.97328	1.064438243
14:54:53	29 03 27	081 17 34		78	-5.28902	-6.8902	0.96558369
14:54:58	29 03 33	081 17 32		19	-5.25972	-6.79048	0.880034176
14:56:44	29 03 56	081 17 03		103	-4.83584	-6.40847	0.315244559
14:56:48	29 03 57	081 16 54	200	69	-4.70442	-6.39201	0.197582837
14:56:53	29 04 00	081 16 49	300	67	-4.63138	-6.34222	0.110732647
14:56:58	29 04 03	081 16 44	300	78	-4.55831	-6.2924	0.033320074
14:57:07	29 04 11	081 16 34	400	60	-4.41219	-6.15954	0.176745054
14:57:12	29 04 13	081 16 29	400	98	-4.33914	-6.12634	0.256173218
14:57:16	29 04 17	081 16 22	500	69	-4.23688	-6.05995	0.378054238
14:57:21	29 04 21	081 16 18	500	98	-4.17841	-5.99349	0.463474786
14:57:25	29 04 27	081 16 13		79	-4.10523	-5.89365	0.582028474
14:57:30	29 04 33	081 16 12	600	93	-4.09067	-5.79408	0.659429075
14:57:34	29 04 40	081 16 14	700	88	-4.11982	-5.67771	0.728150516
14:57:39	29 04 46	081 16 18	700	98	-4.17817	-5.57792	0.780020609
14:57:44	29 04 52	081 16 23	800	94	-4.25114	-5.47815	0.839143656
14:57:48	29 04 57	081 16 29	800	105	-4.33871	-5.39496	0.891569849
14:57:53	29 05 01	081 16 37	900	102	-4.45551	-5.32841	0.936322648
14:57:57	29 05 01	081 16 46	900	102	-4.58694	-5.32831	0.931212373
14:58:02	29 04 58	081 16 54	900	90	-4.7038	-5.3781	0.892924114
14:58:07	29 04 54	081 17 01	900	126	-4.80608	-5.44452	0.851429773
14:58:11	29 04 48	081 17 09	900	108	-4.92299	-5.54418	0.802573718
14:58:16	29 04 42	081 17 16	900	103	-5.0253	-5.64384	0.772441131
14:58:21	29 04 37	081 17 23	900	103	-5.1276	-5.72689	0.77935679
14:58:25	29 04 32	081 17 30	900	102	-5.2299	-5.80993	0.807999306
14:58:30	29 04 27	081 17 37	900	116	-5.3322	-5.89296	0.856188026
14:58:34	29 04 22	081 17 45	900	107	-5.44911	-5.97599	0.934766979
14:58:39	29 04 17	081 17 53	900	107	-5.56603	-6.05901	1.02745739
14:58:44	29 04 13	081 18 01	900		-5.68293	-6.1254	1.132606701
14:58:48	29 04 08	081 18 07	900	103	-5.77064	-6.20845	1.213456698
14:58:53	29 04 04	081 18 15	900	90	-5.88755	-6.27484	1.32940342
14:58:58	29 04 00	081 18 22	900	93	-5.98985	-6.34124	1.43396564
14:59:02	29 03 57	081 18 29	900	86	-6.09214	-6.39101	1.539563164
14:59:07	29 03 54	081 18 36	900	90	-6.19443	-6.44079	1.646249143
14:59:11	29 03 50	081 18 42	800	92	-6.28211	-6.50717	1.741630393
14:59:16	29 03 44	081 18 47	800	122	-6.35524	-6.60684	1.83034041
14:59:20	29 03 35	081 18 45		25	-6.32594	-6.75624	1.836281938
14:59:25	29 03 33	081 18 45	700	97	-6.32619	-6.78971	1.845864404
14:59:30	29 03 26	081 18 42	700	63	-6.28248	-6.90613	1.841650694
14:59:34	29 03 23	081 18 38	700	77	-6.22411	-6.95607	1.805801184
14:59:39	29 03 17	081 18 36	600	71	-6.19496	-7.05581	1.820338169
14:59:44	29 03 13	081 18 32	600	69	-6.1366	-7.12237	1.799024712
14:59:48	29 03 08	081 18 30	500	67	-6.10744	-7.20549	1.815409741
14:59:53	29 03 05	081 18 25	500	50	-6.03445	-7.25543	1.780985482

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14:59:57	29 03 04	081 18 21	500	56	-5.97603	-7.27211	1.742514925
15:00:02	29 03 04	081 18 16	400	71	-5.90297	-7.27215	1.683629887
15:00:07	29 03 05	081 18 10	400	71	-5.81531	-7.25561	1.604149939
15:00:11	29 03 06	081 18 04	400	61	-5.72764	-7.23906	1.52573168
15:00:16	29 03 08	081 17 59	300	63	-5.65455	-7.20585	1.448540317
15:00:20	29 03 10	081 17 54		69	-5.5814	-7.17256	1.371605663
15:00:25	29 03 13	081 17 49	300	45	-5.5084	-7.12286	1.284102766
15:00:30	29 03 16	081 17 47		79	-5.47906	-7.07291	1.228913643
15:00:34	29 03 20	081 17 42		60	-5.40597	-7.00647	1.130149532
15:00:39	29 03 23	081 17 38		69	-5.3475	-6.95665	1.053344793
15:00:43	29 03 26	081 17 33		30	-5.27442	-6.90684	0.965663922
15:02:06	29 03 54	081 16 57	300	92	-4.7483	-6.44188	0.263701808
15:02:11	29 03 59	081 16 51	300	79	-4.6606	-6.35882	0.142918289
15:02:16	29 04 03	081 16 46	400	94	-4.58755	-6.29241	0.044384288
15:02:20	29 04 08	081 16 40	500	345	-4.49988	-6.20938	0.076654939
15:02:25	29 03 48	081 17 00	3300	531	-4.79968	-6.55186	0.379490977
15:02:30	29 04 17	081 16 27	700	80	-4.30994	-6.05995	0.31828548
15:02:34	29 04 20	081 16 21	700	100	-4.22228	-6.01014	0.418139026
15:02:39	29 04 27	081 16 17	800	97	-4.1638	-5.89383	0.537578344
15:02:43	29 04 34	081 16 14	900	104	-4.11993	-5.77751	0.651172267
15:02:48	29 04 42	081 16 15	900	111	-4.13445	-5.6445	0.746529665
15:02:53	29 04 50	081 16 18	900	94	-4.17817	-5.51147	0.838673904
15:02:57	29 04 55	081 16 24	1000	103	-4.26575	-5.42832	0.880745467
15:03:02	29 05 01	081 16 31	1000	91	-4.36791	-5.32849	0.949854335
15:03:07	29 05 05	081 16 37	1000	115	-4.45548	-5.26193	1.002430915
15:03:11	29 05 09	081 16 46	1000	94	-4.58686	-5.19533	1.064134938
15:03:16	29 05 10	081 16 54	1000	99	-4.70368	-5.17862	1.090204846
15:03:20	29 05 07	081 17 02	1000	95	-4.82054	-5.22841	1.063523361
15:03:25	29 05 04	081 17 10	1000	106	-4.93741	-5.27819	1.051624972
15:03:30	29 04 58	081 17 16	1000	103	-5.02511	-5.37787	0.997245537
15:03:34	29 04 53	081 17 23	1000	97	-5.1274	-5.46091	0.980315487
15:03:39	29 04 49	081 17 30	900	94	-5.22966	-5.5273	0.993129793
15:03:43	29 04 44	081 17 36	900	118	-5.31735	-5.61035	0.998548249
15:03:48	29 04 37	081 17 43	900	77	-5.41969	-5.72664	1.012713413
15:03:53	29 04 33	081 17 48	1000	108	-5.49279	-5.7931	1.044280165
15:03:57	29 04 28	081 17 55	1000	90	-5.5951	-5.87613	1.10531867
15:04:02	29 04 23	081 18 01	1000	105	-5.68281	-5.95918	1.163871855
15:04:07	29 04 18	081 18 08	1000	90	-5.78512	-6.04221	1.245900129
15:04:11	29 04 13	081 18 14	1000	98	-5.87283	-6.12525	1.321384629
15:04:16	29 04 09	081 18 21	1000	86	-5.97513	-6.19166	1.418493119
15:04:20	29 04 05	081 18 27	1000	105	-6.06283	-6.25807	1.504590339
15:04:25	29 04 00	081 18 34	1000	94	-6.16515	-6.3411	1.609001873
15:04:30	29 03 55	081 18 40	1000	94	-6.25287	-6.42413	1.702648625
15:04:34	29 03 50	081 18 46	900	88	-6.34056	-6.50714	1.799499471
15:04:39	29 03 44	081 18 50	900	102	-6.39909	-6.60683	1.873408334
15:04:43	29 03 37	081 18 53	900	76	-6.44303	-6.72316	1.941083097
15:04:48	29 03 31	081 18 53	900	85	-6.44314	-6.82291	1.96742275
15:04:53	29 03 25	081 18 50	800	79	-6.39939	-6.92267	1.957085847
15:04:57	29 03 20	081 18 46	800	88	-6.34105	-7.00585	1.932893409
15:05:02	29 03 16	081 18 40	800	90	-6.25347	-7.07244	1.8802551
15:05:07	29 03 11	081 18 34	700	78	-6.16588	-7.15562	1.840730926
15:05:11	29 03 07	081 18 29	700	88	-6.09291	-7.22219	1.811847919
15:05:16	29 03 03	081 18 23	700	71	-6.00532	-7.28878	1.776041277
15:05:20	29 03 00	081 18 18	600	90	-5.9323	-7.33869	1.747454902
15:05:25	29 03 01	081 18 10	600	73	-5.81542	-7.32218	1.646415246
15:05:30	29 03 03	081 18 04	500	86	-5.72772	-7.28897	1.558318608
15:05:34	29 03 07	081 17 58	500	85	-5.64001	-7.22255	1.4486203
15:05:39	29 03 12	081 17 53	400	71	-5.56687	-7.13946	1.338806715
15:05:43	29 03 15	081 17 48	400	77	-5.49379	-7.08965	1.251039699
15:05:48	29 03 19	081 17 43	400	75	-5.4207	-7.02322	1.152279129
15:05:53	29 03 23	081 17 38	300	67	-5.34758	-6.95675	1.05347096
15:05:57	29 03 26	081 17 33	300	78	-5.2745	-6.90694	0.965790333
15:06:02	29 03 30	081 17 28	200	320	-5.20138	-6.84047	0.866973697
15:06:11	29 04 02	081 16 47	200	69	-4.60212	-6.30896	0.066433943
15:06:16	29 04 06	081 16 43	300	78	-4.54367	-6.24254	0.022042153

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15:06:20	29 04 10	081 16 38	400	82	-4.47062	-6.17612	0.120663275
15:06:25	29 04 15	081 16 33	400	68	-4.39754	-6.09305	0.231063738
15:06:30	29 04 19	081 16 29	500	80	-4.33909	-6.02662	0.319475154
15:06:34	29 04 23	081 16 24	600	85	-4.26604	-5.96021	0.417976216
15:06:39	29 04 29	081 16 21	600	67	-4.22216	-5.86049	0.521367197
15:06:43	29 04 34	081 16 20	700	99	-4.20752	-5.7774	0.595835666
15:06:48	29 04 41	081 16 23	700	93	-4.25125	-5.661	0.672266723
15:06:53	29 04 47	081 16 28	700	92	-4.3242	-5.5612	0.736078268
15:06:57	29 04 52	081 16 34	800	82	-4.41178	-5.47804	0.794653392
15:07:02	29 04 55	081 16 40	800		-4.49937	-5.4281	0.833062685
15:07:07	29 04 56	081 16 49	900		-4.63081	-5.4114	0.850780693
15:07:11	29 04 54	081 16 57	900		-4.74767	-5.44456	0.83625747
15:07:16	29 04 51	081 17 05	900	115	-4.86454	-5.49435	0.823791031
15:07:20	29 04 46	081 17 13	900	84	-4.98143	-5.57738	0.802374393
15:07:25	29 04 42	081 17 19	900	132	-5.06911	-5.64381	0.799715781
15:07:30	29 04 36	081 17 29	900	103	-5.21524	-5.74344	0.835184776
15:07:34	29 04 31	081 17 36	1000	120	-5.31757	-5.8265	0.873903602
15:07:39	29 04 27	081 17 45	1000	97	-5.44907	-5.89289	0.963157934
15:07:43	29 04 22	081 17 51	900	102	-5.53674	-5.97591	1.018649841
15:07:48	29 04 18	081 17 59	900	121	-5.65364	-6.0423	1.116644406
15:07:53	29 04 13	081 18 08	900	103	-5.78517	-6.12531	1.234200809
15:07:57	29 04 09	081 18 16	900	95	-5.90207	-6.1917	1.345518165
15:08:02	29 04 05	081 18 23	900	110	-6.00438	-6.2581	1.446140332
15:08:07	29 04 02	081 18 32	900		-6.13588	-6.30784	1.578393331
15:08:11	29 03 59	081 18 40	900	65	-6.25277	-6.3576	1.697391561
15:08:16	29 03 57	081 18 45	800	110	-6.32581	-6.39075	1.772467403
15:08:20	29 03 53	081 18 54	800	79	-6.45733	-6.45711	1.909386998
15:08:25	29 03 50	081 19 00	800	89	-6.54502	-6.50689	2.002174959
15:08:30	29 03 47	081 19 07	800	92	-6.64732	-6.55666	2.110168027
15:08:34	29 03 41	081 19 11		65	-6.70559	-6.65609	2.183741963
15:08:39	29 03 36	081 19 11	900	77	-6.70597	-6.7395	2.200806109
15:08:43	29 03 31	081 19 08	800	77	-6.66221	-6.82264	2.17813903
15:08:48	29 03 26	081 19 04	800	48	-6.60387	-6.90583	2.145434142
15:08:53	29 03 23	081 19 01	700	81	-6.56007	-6.95572	2.119582657
15:08:57	29 03 19	081 18 56	700	62	-6.4871	-7.02229	2.07436506
15:09:02	29 03 15	081 18 53	700	81	-6.44335	-7.08884	2.059645933
15:09:06	29 03 11	081 18 48	700	67	-6.37038	-7.15541	2.021697022
15:09:11	29 03 07	081 18 44	600	163	-6.31199	-7.22194	2.000684493
15:09:16	29 02 59	081 18 33		2071	-6.15126	-7.35489	1.933523281
15:09:16	29 03 04	081 18 39	600	63	-6.239	-7.27189	1.962329808
15:09:20	29 03 01	081 18 35	600	63	-6.18062	-7.32182	1.939467239
15:09:25	29 02 59	081 18 30	600	79	-6.10762	-7.35514	1.89787405
15:09:29	29 02 55	081 18 25	600	56	-6.03464	-7.42171	1.87921938
15:09:34	29 02 54	081 18 20	500	81	-5.96159	-7.43837	1.833061954
15:09:39	29 02 54	081 18 13		52	-5.85919	-7.43829	1.755849403
15:09:43	29 02 57	081 18 10		79	-5.81532	-7.38846	1.689896243
15:09:48	29 03 01	081 18 05		57	-5.74222	-7.32203	1.591122667
15:09:53	29 03 04	081 18 01	400	55	-5.68385	-7.27235	1.514501226
15:09:57	29 03 07	081 17 58		86	-5.63988	-7.22238	1.448410156
15:10:02	29 03 12	081 17 53		61	-5.56676	-7.13933	1.338638358
15:10:06	29 03 15	081 17 49		60	-5.50829	-7.08951	1.261827638
15:10:16	29 03 20	081 17 40		69	-5.37676	-7.0065	1.108427556
15:10:20	29 03 23	081 17 35		52	-5.30368	-6.95669	1.020950785
15:10:25	29 03 26	081 17 32		68	-5.25982	-6.90685	0.95489291
15:11:06	29 03 58	081 16 52	200	96	-4.6752	-6.37541	0.164961542
15:11:11	29 04 03	081 16 46	300	86	-4.58753	-6.29238	0.044348552
15:11:16	29 04 08	081 16 41	300	77	-4.51444	-6.20931	0.066298514
15:11:20	29 04 12	081 16 36	400	86	-4.44139	-6.1429	0.164777774
15:11:25	29 04 16	081 16 30	400	85	-4.35371	-6.07646	0.27419443
15:11:29	29 04 21	081 16 25	500	87	-4.28065	-5.99342	0.384228374
15:11:34	29 04 26	081 16 20	600	97	-4.20759	-5.91037	0.494524101
15:11:39	29 04 33	081 16 17	700	79	-4.16371	-5.79405	0.609841637
15:11:43	29 04 39	081 16 18	700	85	-4.17825	-5.6943	0.680712016
15:11:48	29 04 45	081 16 21	700	95	-4.222	-5.59452	0.744780056
15:11:53	29 04 52	081 16 24	800	103	-4.26575	-5.47814	0.833917072

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15:11:57	29 04 58	081 16 30	800	97	-4.3533	-5.37833	0.904279252
15:12:02	29 05 00	081 16 38	800	92	-4.4701	-5.34499	0.918329564
15:12:06	29 04 59	081 16 46	900	112	-4.58696	-5.36156	0.897979392
15:12:11	29 04 56	081 16 55	900	115	-4.71843	-5.41134	0.862742107
15:12:15	29 04 52	081 17 04	900	93	-4.84992	-5.47773	0.834017413
15:12:20	29 04 48	081 17 11	900	120	-4.9522	-5.54415	0.816290014
15:12:25	29 04 43	081 17 20	1000	100	-5.08373	-5.6272	0.821834579
15:12:29	29 04 40	081 17 28	1000	108	-5.2006	-5.67698	0.866871836
15:12:34	29 04 36	081 17 36	1000	121	-5.31749	-5.74338	0.917827354
15:12:39	29 04 31	081 17 45	900	86	-5.44898	-5.82636	0.990284982
15:12:43	29 04 28	081 17 52	900	121	-5.55126	-5.87615	1.064295121
15:12:48	29 04 23	081 18 01	900	95	-5.68278	-5.95915	1.163850599
15:12:53	29 04 19	081 18 08	900	95	-5.78507	-6.02556	1.248856853
15:12:57	29 04 15	081 18 15		98	-5.88712	-6.0917	1.339379752
15:13:02	29 04 11	081 18 22	900	96	-5.98968	-6.15836	1.434979091
15:13:06	29 04 08	081 18 30	900	71	-6.10657	-6.20812	1.549168393
15:13:11	29 04 05	081 18 35	900	93	-6.17964	-6.25792	1.621400415
15:13:16	29 04 01	081 18 42	800	86	-6.28192	-6.32429	1.724913066
15:13:20	29 03 57	081 18 48	700	88	-6.36959	-6.39067	1.81612355
15:13:25	29 03 53	081 18 54	800	71	-6.45733	-6.45711	1.909386998
15:13:29	29 03 48	081 18 57		53	-6.50099	-6.53994	1.962946739
15:13:34	29 03 44	081 18 58		113	-6.51566	-6.60642	1.987998524
15:13:38	29 03 37	081 18 53	700	60	-6.44297	-6.72309	1.941008102
15:13:43	29 03 34	081 18 49	700	69	-6.3846	-6.77303	1.89729688
15:13:48	29 03 30	081 18 45	600	67	-6.32621	-6.83955	1.860823297
15:13:52	29 03 27	081 18 40	600	71	-6.25322	-6.8895	1.808421018
15:13:57	29 03 23	081 18 36	600	60	-6.19486	-6.95606	1.778849669
15:14:02	29 03 20	081 18 32	500	69	-6.13645	-7.00596	1.746017336
15:14:06	29 03 17	081 18 27		86	-6.06332	-7.05574	1.702918953
15:14:11	29 03 13	081 18 21	500	70	-5.97589	-7.12249	1.659882029
15:14:15	29 03 09	081 18 17	500	63	-5.91752	-7.18905	1.646962756
15:14:20	29 03 07	081 18 12	400	68	-5.84449	-7.22233	1.606950411
15:14:25	29 03 04	081 18 07	400	50	-5.7715	-7.27227	1.580681437
15:14:29	29 03 07	081 18 04		84	-5.72752	-7.2223	1.514928542
15:14:34	29 03 08	081 17 57		70	-5.62525	-7.20577	1.426440429
15:14:38	29 03 12	081 17 53		69	-5.56676	-7.13933	1.338638358
15:14:43	29 03 16	081 17 49		117	-5.50828	-7.07288	1.250938225
15:14:48	29 03 14	081 17 39		90	-5.36224	-7.10626	1.167959739
15:14:52	29 03 21	081 17 40	300	87	-5.37682	-6.98998	1.097400577
15:14:57	29 03 27	081 17 37		47	-5.33284	-6.89017	0.999139504
15:15:02	29 03 28	081 17 33		81	-5.2744	-6.87359	0.943667148
15:15:06	29 03 29	081 17 26		8	-5.17214	-6.85706	0.857002503
15:19:48	29 03 57	081 16 54		79	-4.70438	-6.39195	0.197512877
15:19:52	29 04 00	081 16 48		96	-4.61671	-6.34214	0.101576102
15:19:57	29 04 06	081 16 43		89	-4.54361	-6.24245	0.022149352
15:20:01	29 04 11	081 16 38		86	-4.47052	-6.15938	0.132796417
15:20:06	29 04 16	081 16 33		67	-4.39744	-6.07631	0.243436877
15:20:11	29 04 20	081 16 29	500	90	-4.33908	-6.01	0.331770933

Table 4

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UTC TIME	Latitude	Longitude	Alt	Grndspd	East (X)	North (Y)	DIS RW23
HH:MM:SS	D M S	D M S	Feet	Konts	NM	NM	NM
14:39:52	29 10 45	081 03 37		67	6.92843	0.3929	13.27374949
14:39:57	29 10 49	081 03 33	200	92	6.98678	0.45947	13.35763455
14:40:01	29 10 53	081 03 26	200	92	7.08882	0.52608	13.47933243
14:40:06	29 10 56	081 03 19	300	105	7.19092	0.57608	13.592725
14:40:11	29 11 00	081 03 11	400	84	7.30759	0.64272	13.72708144
14:40:15	29 11 02	081 03 04	500	97	7.40971	0.67609	13.83215132
14:40:20	29 11 06	081 02 57	600	89	7.51178	0.74272	13.95387351
14:40:24	29 11 09	081 02 50	600	131	7.61384	0.79272	14.06724617
14:40:29	29 11 14	081 02 40		43	7.7594	0.876	14.23494369
14:40:34	29 11 16	081 02 37	800	113	7.80342	0.90934	14.28974749
14:40:38	29 11 22	081 02 30	800	77	7.90541	1.00922	14.42812379
14:40:43	29 11 25	081 02 24	900	105	7.99292	1.05921	14.52890174
14:40:47	29 11 31	081 02 18	1000	90	8.08035	1.15908	14.65479631
14:40:52	29 11 37	081 02 14	1000	81	8.13857	1.25891	14.75564834
14:40:57	29 11 43	081 02 11	1100	102	8.18224	1.35872	14.84421461
14:41:01	29 11 49	081 02 06	1100	97	8.25505	1.45857	14.95802534
14:41:06	29 11 56	081 02 03	1200	101	8.29869	1.57502	15.05568902
14:41:10	29 12 03	081 01 59	1200	90	8.35688	1.69147	15.16613233
14:41:15	29 12 09	081 01 55	1300	96	8.41513	1.79131	15.26817305
14:41:20	29 12 15	081 01 50	1400	104	8.48797	1.89118	15.38279342
14:41:24	29 12 22	081 01 46	1400	113	8.54615	2.00763	15.49398372
14:41:29	29 12 30	081 01 42	1500	85	8.60435	2.14073	15.6144351
14:41:33	29 12 36	081 01 39	1500	99	8.64797	2.24055	15.70502126
14:41:38	29 12 42	081 01 34	1600	104	8.7208	2.34041	15.82037078
14:41:43	29 12 49	081 01 29	1600	92	8.79356	2.4569	15.94486973
14:41:47	29 12 55	081 01 25	1700	104	8.8518	2.55675	16.04830307
14:41:52	29 13 02	081 01 20	1700	110	8.92456	2.67323	16.17318947
14:41:56	29 13 09	081 01 15	1800	96	8.99736	2.78973	16.29832058
14:42:01	29 13 15	081 01 10	1900	113	9.07018	2.88961	16.41439491
14:42:06	29 13 22	081 01 04	1900	101	9.15751	3.00612	16.55191013
14:42:10	29 13 29	081 01 01	1900	110	9.20109	3.12257	16.65336359
14:42:15	29 13 37	081 00 56	1900	112	9.27381	3.25568	16.78857543
14:42:19	29 13 44	081 00 51	1900	107	9.34655	3.37218	16.91461954
14:42:24	29 13 51	081 00 46	1900	133	9.41929	3.48867	17.04083258
14:42:28	29 14 00	081 00 41	1800	126	9.49192	3.6384	17.18624759
14:42:33	29 14 09	081 00 36	1800	117	9.5646	3.78814	17.33208699
14:42:38	29 14 16	081 00 29	1800	122	9.6665	3.90468	17.48271276
14:42:42	29 14 24	081 00 24	1700	141	9.73915	4.03778	17.61932708
14:42:47	29 14 33	081 00 17	1700	118	9.84098	4.18758	17.7896105
14:42:52	29 14 41	081 00 12	1700	113	9.91367	4.3207	17.92673768
14:42:56	29 14 48	081 00 06	1700	121	10.00097	4.43722	18.06602971
14:43:01	29 14 56	081 00 01	1600	130	10.07361	4.57033	18.20349294
14:43:05	29 15 05	080 59 56	1600	94	10.14626	4.72008	18.35113824
14:43:10	29 15 11	080 59 51	1700	116	10.21904	4.81998	18.46926026
14:43:15	29 15 19	080 59 47	1700	104	10.27714	4.95308	18.59572617
14:43:19	29 15 26	080 59 43	1700	115	10.33526	5.06956	18.7124137
14:43:24	29 15 34	080 59 38	1700	109	10.40793	5.20269	18.85095266
14:43:29	29 15 42	080 59 35	1700	117	10.45144	5.33577	18.96657692
14:43:33	29 15 50	080 59 30	1700	123	10.5241	5.4689	19.10556188
14:43:38	29 15 59	080 59 27	1700	113	10.56758	5.61861	19.23200329
14:43:42	29 16 07	080 59 23	1700	112	10.62566	5.75171	19.36000764
14:43:47	29 16 15	080 59 20	1700	132	10.66916	5.88479	19.476853982
14:43:51	29 16 24	080 59 15	1700	111	10.74179	6.03455	19.62713063
14:43:56	29 16 32	080 59 11	1700	125	10.79986	6.16766	19.7558878
14:44:01	29 16 41	080 59 07	1700	124	10.8579	6.3174	19.89535679
14:44:05	29 16 49	080 59 01	1700	126	10.94512	6.45056	20.04717237
14:44:10	29 16 58	080 58 56	1700	113	11.01773	6.60032	20.19839127
14:44:15	29 17 05	080 58 50	1700	148	11.10497	6.71686	20.33989101
14:44:19	29 17 14	080 58 43	1700	128	11.20672	6.86667	20.5138801
14:44:24	29 17 23	080 58 39	1700	132	11.26475	7.01641	20.65443408
14:44:29	29 17 34	080 58 38	1700	123	11.27898	7.19932	20.78331225
14:44:33	29 17 43	080 58 38	1700	130	11.27871	7.34896	20.88031939
14:44:38	29 17 53	080 58 38	1700	129	11.2784	7.51521	20.98881206

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14:44:42	29 18 03	080 58 41	1700	136	11.23438	7.68139	21.06522134
14:44:47	29 18 13	080 58 44	1700	144	11.19035	7.84757	21.14274488
14:44:51	29 18 23	080 58 48	1700	128	11.13176	8.01373	21.21059182
14:44:56	29 18 33	080 58 51	1700	140	11.08774	8.1799	21.29039299
14:45:01	29 18 43	080 58 54	1700	122	11.04372	8.34608	21.37128575
14:45:05	29 18 52	080 58 56	1800	131	11.01436	8.49571	21.45249866
14:45:10	29 19 02	080 58 59	1900	121	10.9704	8.66193	21.53544055
14:45:14	29 19 11	080 59 02	1900	128	10.92642	8.81148	21.60778735
14:45:19	29 19 20	080 59 06	1900	106	10.86788	8.96102	21.67063964
14:45:24	29 19 28	080 59 09	2000	121	10.82398	9.09399	21.73314176
14:45:28	29 19 37	080 59 12	2000	148	10.78001	9.24355	21.80810514
14:45:33	29 19 48	080 59 15	2100	486	10.73603	9.4264	21.90773785
14:45:42	29 20 07	080 59 20	2100	119	10.66263	9.74218	22.08427506
14:45:47	29 20 16	080 59 22	2200	137	10.63329	9.89181	22.1728174
14:45:51	29 20 26	080 59 26	2300	104	10.57478	10.05802	22.25434894
14:45:56	29 20 34	080 59 27	2300	125	10.55998	10.191	22.34201665
14:46:00	29 20 43	080 59 30	2300	132	10.51602	10.34057	22.42279409
14:46:05	29 20 53	080 59 32	2400	125	10.48665	10.50683	22.52652777
14:46:09	29 21 02	080 59 35	2400	115	10.44269	10.65639	22.60887052
14:46:14	29 21 11	080 59 38	2500	135	10.39879	10.80601	22.69207005
14:46:19	29 21 21	080 59 42	2500	147	10.34024	10.97218	22.77896019
14:46:24	29 21 32	080 59 44		120	10.30957	11.15368	22.89663698
14:46:28	29 21 37	080 59 53	2500	145	10.17957	11.23793	22.87680927
14:46:33	29 21 44	081 00 02	2600	124	10.04834	11.35416	22.88183565
14:46:37	29 21 52	081 00 09		147	9.94494	11.48557	22.91756605
14:46:42	29 21 53	081 00 22	2500	146	9.75676	11.50327	22.81272238
14:46:46	29 21 54	081 00 34	2500	129	9.58196	11.51963	22.71624496
14:46:51	29 21 54	081 00 46	2500	161	9.40719	11.51936	22.6076572
14:46:56	29 21 51	081 00 59	2500	122	9.21792	11.46919	22.45159552
14:47:01	29 21 45	081 01 08	2600	128	9.08704	11.36929	22.2924448
14:47:05	29 21 41	081 01 18	2500	145	8.94144	11.30252	22.15064682
14:47:10	29 21 34	081 01 28	2500	131	8.79596	11.18592	21.9695854
14:47:14	29 21 29	081 01 38	2500	147	8.65043	11.10258	21.81504529
14:47:19	29 21 23	081 01 49	2500	144	8.49035	11.0026	21.6805286
14:47:23	29 21 17	081 01 59	2500	119	8.34483	10.90264	21.47123305
14:47:28	29 21 13	081 02 09	2500	139	8.19926	10.83594	21.330577
14:47:33	29 21 07	081 02 19	2500	124	8.05373	10.73599	21.16351085
14:47:37	29 21 01	081 02 27	2500	131	7.93733	10.63608	21.01394064
14:47:42	29 20 56	081 02 37	2500	137	7.79177	10.55276	20.86050601
14:47:46	29 20 49	081 02 46	2600	116	7.66085	10.43626	20.68914058
14:47:51	29 20 44	081 02 55	2600	137	7.52985	10.35297	20.54463738
14:47:56	29 20 39	081 03 05	2600	137	7.38428	10.26966	20.39173926
14:48:00	29 20 32	081 03 14	2600	138	7.25331	10.15312	20.22060885
14:48:05	29 20 26	081 03 24	2600	128	7.10775	10.05319	20.05456245
14:48:09	29 20 20	081 03 33	2600	128	6.97675	9.95328	19.89715083
14:48:14	29 20 14	081 03 42	2600	138	6.84575	9.85337	19.73985899
14:48:19	29 20 08	081 03 52	2600	569	6.70017	9.75346	19.57430032
14:48:23	29 19 27	081 04 06		383	6.42356	9.57027	19.26572741
14:48:32	29 19 51	081 04 21	2600	128	6.27797	9.47036	19.10075208
14:48:37	29 19 45	081 04 30	2600	522	6.14694	9.37047	18.94422635
14:48:42	29 20 16	081 05 00		102	6.00134	9.27056	18.77962855
14:48:42	29 19 39	081 04 40	2600	137	5.8849	9.15407	18.61785073
14:48:51	29 19 17	081 05 03	2600	39	5.66658	8.90446	18.28879136
14:48:56	29 19 20	081 05 04	2600	124	5.65196	8.95433	18.32200938
14:49:00	29 19 14	081 05 12	2600	128	5.53549	8.85446	18.17422561
14:49:05	29 19 08	081 05 21	2600	128	5.40444	8.75459	18.01847051
14:49:09	29 19 02	081 05 30	2500	127	5.27336	8.65467	17.86281886
14:49:14	29 18 58	081 05 40	2600	101	5.12772	8.58809	17.72727498
14:49:19	29 18 53	081 05 47		115	5.02517	8.50381	17.60070079
14:49:23	29 18 49	081 05 56	2600	127	4.8947	8.43826	17.47483556
14:49:28	29 18 44	081 06 06	2500	139	4.74902	8.35497	17.32615209
14:49:32	29 18 40	081 06 17	2600	111	4.5888	8.28838	17.18420592
14:49:37	29 18 37	081 06 26	2600	112	4.45769	8.23841	17.07232293
14:49:42	29 18 33	081 06 35	2600	121	4.32658	8.17181	16.94669917
14:49:51	29 18 27	081 06 55	2600	121	4.0352	8.07185	16.70996007

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14:49:55	29 18 26	081 07 05	2600	109	3.88948	8.05513	16.62108845
14:50:00	29 18 25	081 07 15	2600	126	3.74376	8.03841	16.53304038
14:50:05	29 18 26	081 07 26	2600	109	3.58345	8.05494	16.46749175
14:50:09	29 18 29	081 07 35	2600	121	3.45227	8.10475	16.44651582
14:50:14	29 18 34	081 07 44	2600	107	3.32107	8.18781	16.45588517
14:50:19	29 18 41	081 07 49	2600	116	3.24815	8.30416	16.52354938
14:50:23	29 18 49	081 07 53	2600	109	3.18979	8.43714	16.6135743
14:50:28	29 18 57	081 07 56		125	3.14561	8.56906	16.7099683
14:50:32	29 19 06	081 07 59	2600	106	3.10221	8.71975	16.82402575
14:50:37	29 19 14	081 08 02	2600	103	3.05843	8.85274	16.92278835
14:50:42	29 19 22	081 08 04	2600	138	3.02923	8.98574	17.02862995
14:50:46	29 19 32	081 08 05		103	3.0142	9.15085	17.16996768
14:50:51	29 19 40	081 08 07	2600	120	2.98537	9.28499	17.27785183
14:50:55	29 19 49	081 08 10		121	2.94122	9.43343	17.39243429
14:51:00	29 19 58	081 08 11	2700	121	2.92696	9.58429	17.52257378
14:51:04	29 20 07	081 08 13	2600	132	2.89774	9.73387	17.64556849
14:51:09	29 20 17	081 08 15	2600	119	2.86852	9.90012	17.78416455
14:51:14	29 20 26	081 08 17	2600	121	2.83931	10.04975	17.90814569
14:51:18	29 20 35	081 08 20	2600	117	2.79554	10.19937	18.02660968
14:51:23	29 20 44	081 08 22	2600	134	2.76634	10.34899	18.15151402
14:51:27	29 20 54	081 08 24	2600	119	2.73713	10.51524	18.29208121
14:51:32	29 21 03	081 08 26	2600	119	2.70793	10.66487	18.41785303
14:51:37	29 21 12	081 08 29	2600	132	2.66416	10.81449	18.53833472
14:51:41	29 21 21	081 08 34	2600	134	2.59127	10.9641	18.64814797
14:51:46	29 21 31	081 08 37	2600	113	2.5475	11.13035	18.78520207
14:51:51	29 21 39	081 08 41	2600	122	2.48918	11.26334	18.88653836
14:51:55	29 21 48	081 08 43	2500	132	2.45998	11.41291	19.01459025
14:52:00	29 21 58	081 08 45	2500	117	2.43079	11.57916	19.15853195
14:52:04	29 22 07	081 08 48	2500	130	2.38703	11.72878	19.28211303
14:52:09	29 22 17	081 08 50	2400	148	2.35783	11.89498	19.42683502
14:52:14	29 22 27	081 08 55	2400	117	2.28495	12.06122	19.5566521
14:52:18	29 22 36	081 08 56	2300	128	2.27032	12.21079	19.69175791
14:52:23	29 22 45	081 09 00	2300	144	2.21202	12.36041	19.81216365
14:52:27	29 22 56	081 09 03	2300	111	2.16826	12.54328	19.96934009
14:52:32	29 23 04	081 09 06	2200	127	2.12452	12.67621	20.07995241
14:52:37	29 23 13	081 09 11	2200	127	2.05166	12.82583	20.19714256
14:52:41	29 23 20	081 09 19	2200	132	1.93514	12.94217	20.26948409
14:52:46	29 23 26	081 09 28	2100	136	1.80405	13.04183	20.32249642
14:52:51	29 23 31	081 09 39	2000	133	1.64386	13.12485	20.35197255
14:52:55	29 23 35	081 09 49	2000	138	1.49824	13.19132	20.37152449
14:52:59	29 23 39	081 10 00	1900	144	1.33805	13.25772	20.38802879
14:53:04	29 23 44	081 10 12	1900	128	1.16332	13.34082	20.41794135
14:53:09	29 23 48	081 10 22	1900	121	1.01771	13.4073	20.44156845
14:53:13	29 23 53	081 10 31	1900	146	0.88666	13.4904	20.48630997
14:53:18	29 23 57	081 10 43	1800	150	0.71194	13.55682	20.50474799
14:53:23	29 24 03	081 10 54	1800	116	0.55178	13.65656	20.56076412
14:53:27	29 24 05	081 11 04	1700	128	0.40619	13.68974	20.55726112
14:53:32	29 24 10	081 11 14	1700	135	0.2606	13.77286	20.60339387
14:53:37	29 24 14	081 11 25	1700	142	0.10045	13.83936	20.63130347
14:53:41	29 24 18	081 11 36	1700	122	-0.05969	13.90586	20.66063303
14:53:46	29 24 22	081 11 46	1600	121	-0.20527	13.9723	20.69437326
14:53:50	29 24 26	081 11 55	1600	126	-0.33629	14.03881	20.7323226
14:53:55	29 24 33	081 12 04	1600	137	-0.4673	14.1552	20.82014933
14:53:59	29 24 39	081 12 13	1600	131	-0.59831	14.25496	20.89274713
14:54:04	29 24 47	081 12 20	1600	126	-0.70019	14.38798	21.00441945
14:54:09	29 24 56	081 12 25	1600	115	-0.77296	14.53762	21.13837921
14:54:13	29 25 04	081 12 28	1700	117	-0.81661	14.6707	21.2615965
14:54:18	29 25 13	081 12 27	1700	127	-0.80204	14.82033	21.41145872
14:54:23	29 25 23	081 12 28	1600	97	-0.81657	14.98652	21.57256623
14:54:27	29 25 30	081 12 25	1600	121	-0.77288	15.1029	21.69477218
14:54:32	29 25 38	081 12 19	1700	103	-0.68554	15.23596	21.84112062
14:54:36	29 25 44	081 12 13	1700	123	-0.5982	15.33571	21.95488264
14:54:41	29 25 50	081 12 05	1700	81	-0.48176	15.43545	22.07420035
14:54:45	29 25 55	081 12 01		135	-0.4235	15.51731	22.16545141
14:54:50	29 25 57	081 11 49		70	-0.24886	15.55055	22.23130038

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14:54:55	29 25 57	081 11 43	1700	114	-0.16155	15.55182	22.24963464
14:54:59	29 25 56	081 11 33	1700	113	-0.01601	15.53519	22.26257079
14:55:04	29 25 54	081 11 23	1700	111	0.12953	15.50194	22.26021516
14:55:09	29 25 49	081 11 15	1700	86	0.24597	15.41881	22.20385887
14:55:13	29 25 44	081 11 10	1700	113	0.31875	15.33569	22.13863417
14:55:18	29 25 37	081 11 04	1700	99	0.40609	15.21931	22.04463221
14:55:22	29 25 31	081 10 59	1700	106	0.47887	15.11956	21.96403254
14:55:27	29 25 23	081 10 56	1700	92	0.52255	14.98656	21.84471666
14:55:32	29 25 17	081 10 52	1700	106	0.58078	14.88681	21.7613922
14:55:36	29 25 09	081 10 49	1700	116	0.62446	14.75381	21.64259516
14:55:41	29 25 02	081 10 43	1700	96	0.71181	14.63744	21.55082307
14:55:46	29 24 56	081 10 38	1700	97	0.78461	14.53769	21.47211421
14:55:50	29 24 49	081 10 35	1700	121	0.82829	14.42131	21.37038221
14:55:55	29 24 42	081 10 28	1600	116	0.9302	14.30488	21.28378313
14:55:59	29 24 35	081 10 22	1600	94	1.01757	14.18851	21.19418774
14:56:04	29 24 29	081 10 17	1600	113	1.09037	14.08877	21.11733398
14:56:09	29 24 22	081 10 11	1600	109	1.17774	13.97241	21.02890045
14:56:13	29 24 14	081 10 08	1600	107	1.22144	13.83941	20.91301033
14:56:18	29 24 07	081 10 03	1600	120	1.29426	13.72304	20.82154836
14:56:22	29 23 59	081 09 58	1700	102	1.36709	13.59012	20.71473573
14:56:27	29 23 52	081 09 53	1700	127	1.43991	13.47375	20.62431534
14:56:32	29 23 44	081 09 47	1600	124	1.52729	13.3407	20.52279346
14:56:36	29 23 36	081 09 41	1700	126	1.61469	13.20778	20.42213757
14:56:41	29 23 28	081 09 35	1700	113	1.70209	13.0748	20.32217133
14:56:46	29 23 20	081 09 31	1700	135	1.76037	12.94181	20.21383212
14:56:50	29 23 12	081 09 23	1700	120	1.87689	12.80884	20.12452412
14:56:55	29 23 04	081 09 18	1700	116	1.94974	12.67585	20.02212221
14:56:59	29 22 56	081 09 13	1700	126	2.02259	12.54287	19.92035761
14:57:04	29 22 48	081 09 07	1700	121	2.11	12.40989	19.82412332
14:57:09	29 22 39	081 09 04	1700	132	2.15374	12.26027	19.69814712
14:57:13	29 22 30	081 08 58	1700	118	2.24117	12.11067	19.5877434
14:57:18	29 22 22	081 08 53	1600	124	2.31402	11.97764	19.48860985
14:57:23	29 22 14	081 08 47	1600	135	2.40145	11.84466	19.39542954
14:57:27	29 22 05	081 08 41	1600	144	2.48889	11.69507	19.28765262
14:57:32	29 21 55	081 08 36	1600	111	2.56178	11.52884	19.15997867
14:57:36	29 21 47	081 08 32	1600	137	2.62009	11.39586	19.05847129
14:57:41	29 21 37	081 08 28	1700	124	2.67843	11.22968	18.92686237
14:57:45	29 21 28	081 08 26	1700	120	2.70763	11.08006	18.7999639
14:57:50	29 21 19	081 08 22	1700	144	2.76595	10.93045	18.68485217
14:57:55	29 21 09	081 08 18	1700	122	2.82429	10.76422	18.55517427
14:57:59	29 21 00	081 08 14	1700	121	2.88263	10.61461	18.44147393
14:58:04	29 20 51	081 08 11	1600	137	2.92638	10.46495	18.32246479
14:58:09	29 20 41	081 08 07	1700	121	2.98474	10.29877	18.19502525
14:58:13	29 20 32	081 08 04	1700	128	3.02852	10.14916	18.07731361
14:58:18	29 20 23	081 08 00	1700	115	3.08686	9.99955	17.96637424
14:58:23	29 20 15	081 07 55	1700	146	3.15977	9.86658	17.87748832
14:58:27	29 20 05	081 07 49	1700	118	3.24726	9.70037	17.76597519
14:58:32	29 19 57	081 07 44	1700	114	3.32018	9.5674	17.67899802
14:58:37	29 19 49	081 07 39	1700	262	3.39309	9.43444	17.59290251
14:58:41	29 19 30	081 07 38	1700	109	3.55353	9.13526	17.40076195
14:58:46	29 19 31	081 07 28	1700	133	3.59733	8.96903	17.27450886
14:58:50	29 19 21	081 07 25	1700	117	3.67025	8.83602	17.19215204
14:59:00	29 19 04	081 07 16	1700	131	3.72864	8.68647	17.08923184
14:59:04	29 18 56	081 07 10	1700	137	3.81614	8.55351	17.01596494
14:59:09	29 18 46	081 07 04		113	3.90336	8.38662	16.91434903
14:59:14	29 18 38	081 07 00	1700	114	3.96205	8.25434	16.82957818
14:59:18	29 18 30	081 06 57	1700	141	4.00585	8.12136	16.73740398
14:59:23	29 18 20	081 06 52	1600	118	4.0788	7.95511	16.63254813
14:59:27	29 18 11	081 06 49	1600	112	4.12262	7.80551	16.52785595
14:59:32	29 18 03	081 06 46	1600	113	4.16643	7.67253	16.43805414
14:59:36	29 17 55	081 06 42	1600	122	4.22481	7.53956	16.35678554
14:59:41	29 17 46	081 06 38	1500	113	4.28319	7.38994	16.26243006
14:59:46	29 17 38	081 06 34	1400	113	4.34156	7.25694	16.1829922
14:59:50	29 17 30	081 06 30	1400	101	4.39995	7.12397	16.10450854
14:59:55	29 17 23	081 06 26	1400	116	4.45833	7.00764	16.04071052

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15:00:00	29 17 15	081 06 22	1300	103	4.51671	6.87464	15.96400071
15:00:04	29 17 07	081 06 20	1300	121	4.54595	6.74166	15.87153162
15:00:09	29 16 58	081 06 17	1200	107	4.58977	6.59203	15.77457179
15:00:14	29 16 50	081 06 14	1200	108	4.6336	6.45906	15.6920683
15:00:18	29 16 42	081 06 12	1200	99	4.66285	6.32608	15.60175481
15:00:23	29 16 35	081 06 08	1200	101	4.72124	6.20974	15.54285113
15:00:27	29 16 28	081 06 04	1100	103	4.77961	6.09338	15.48478966
15:00:32	29 16 21	081 06 00	1100	92	4.83801	5.97705	15.42765022
15:00:37	29 16 14	081 05 57	1000	105	4.88181	5.86068	15.36239325
15:00:41	29 16 07	081 05 53	1000	101	4.94021	5.74435	15.30695542
15:00:46	29 16 00	081 05 49	1000	101	4.99862	5.62802	15.25243323
15:00:51	29 15 53	081 05 45	900	114	5.057	5.51166	15.19878812
15:00:55	29 15 45	081 05 42	900	104	5.10084	5.37869	15.12400466
15:00:59	29 15 38	081 05 38	900	90	5.15925	5.26237	15.07227329
15:01:04	29 15 32	081 05 33	900	88	5.23223	5.16268	15.04360011
15:01:09	29 15 26	081 05 29	800	101	5.29061	5.06295	15.00627234
15:01:14	29 15 20	081 05 24	800	104	5.36359	4.96326	14.9794401
15:01:18	29 15 13	081 05 20	800	93	5.422	4.84694	14.93147249
15:01:23	29 15 06	081 05 17	800	101	5.46585	4.7306	14.87465787
15:01:28	29 14 59	081 05 13	700	97	5.52424	4.61426	14.82855103
15:01:32	29 14 52	081 05 10	700	95	5.56809	4.49792	14.77347651
15:01:37	29 14 45	081 05 08	700	93	5.59735	4.38157	14.70916179
15:01:41	29 14 38	081 05 06	700	98	5.62662	4.26522	14.6455544
15:01:46	29 14 30	081 05 06		108	5.62655	4.13208	14.55012555
15:01:51	29 14 22	081 05 07	800	93	5.61231	3.99923	14.44551873
15:01:55	29 14 15	081 05 09	900	103	5.58328	3.88284	14.34255797
15:02:00	29 14 08	081 05 13	900	111	5.52506	3.76641	14.21912053
15:02:04	29 14 02	081 05 20	900	105	5.42308	3.66657	14.07640852
15:02:09	29 13 58	081 05 28	1000	108	5.3065	3.59999	13.94684038
15:02:14	29 13 56	081 05 37	1000	109	5.17529	3.56663	13.83062483
15:02:18	29 13 55	081 05 47	1100	117	5.0295	3.5499	13.7164444
15:02:23	29 13 56	081 05 57	1100	117	4.88367	3.56641	13.6268088
15:02:28	29 13 58	081 06 07	1200	104	4.73784	3.59956	13.55027254
15:02:32	29 14 01	081 06 15	1200	115	4.62114	3.64935	13.50696125
15:02:37	29 14 06	081 06 24	1300	115	4.48986	3.7324	13.47953212
15:02:41	29 14 11	081 06 32	1400	103	4.37316	3.81546	13.46351597
15:02:46	29 14 16	081 06 39	1400	126	4.27103	3.89851	13.4585528
15:02:51	29 14 21	081 06 49	1400	111	4.12516	3.98154	13.42653096
15:02:55	29 14 26	081 06 56	1500	116	4.02305	4.06462	13.42450445
15:03:00	29 14 31	081 07 05	1600	110	3.89178	4.14769	13.40536086
15:03:04	29 14 35	081 07 13	1700	116	3.77511	4.21414	13.3840599
15:03:09	29 14 40	081 07 22	1700	112	3.64383	4.29719	13.36820065
15:03:14	29 14 45	081 07 30	1700	115	3.52713	4.38025	13.36295442
15:03:18	29 14 50	081 07 38	1800	117	3.41045	4.46333	13.35927006
15:03:23	29 14 55	081 07 46	1900	112	3.29378	4.54642	13.35713474
15:03:27	29 15 00	081 07 54	1900	121	3.17709	4.62949	13.35650728
15:03:32	29 15 05	081 08 03	2000	124	3.04584	4.71258	13.34913315
15:03:36	29 15 10	081 08 12	2000	106	2.91457	4.79564	13.3435274
15:03:41	29 15 15	081 08 20	2100	120	2.79791	4.87874	13.34780795
15:03:46	29 15 20	081 08 29	2100	133	2.66665	4.96182	13.34569715
15:03:50	29 15 26	081 08 38	2100	112	2.53539	5.06152	13.35947495
15:03:55	29 15 30	081 08 47	2100	132	2.40415	5.12797	13.3469016
15:03:59	29 15 34	081 08 57	2200	121	2.25834	5.19445	13.32850751
15:04:04	29 15 39	081 09 06	2100	128	2.12709	5.2775	13.33365349
15:04:09	29 15 45	081 09 15	2100	133	1.99584	5.37722	13.35512794
15:04:13	29 15 50	081 09 25	2100	121	1.85003	5.4603	13.35701284
15:04:18	29 15 55	081 09 34	2200	128	1.71881	5.54342	13.36788551
15:04:22	29 15 59	081 09 44	2200	119	1.57301	5.60989	13.35906716
15:04:27	29 16 03	081 09 54	2200	140	1.42721	5.67636	13.35216611
15:04:32	29 16 09	081 10 04	2100	128	1.2814	5.77606	13.37706957
15:04:36	29 16 15	081 10 13	2100	135	1.15018	5.87579	13.41048578
15:04:41	29 16 21	081 10 22	2100	115	1.01896	5.97552	13.44583939
15:04:45	29 16 26	081 10 31	2100	149	0.88775	6.05863	13.46791694
15:04:50	29 16 33	081 10 41	2100	128	0.74197	6.175	13.51660355
15:04:55	29 16 39	081 10 50	2100	152	0.61076	6.27474	13.55784661

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15:04:59	29 16 48	081 10 58		126	0.49409	6.42372	13.65208608
15:05:04	29 16 49	081 11 09	2100	128	0.3338	6.44098	13.60968697
15:05:08	29 16 51	081 11 20	2100	148	0.17346	6.47423	13.58404095
15:05:13	29 16 54	081 11 32	2100	122	-0.00146	6.5241	13.57106978
15:05:17	29 16 55	081 11 43	2100	128	-0.16179	6.54073	13.53380614
15:05:22	29 16 58	081 11 54	2100	139	-0.32213	6.59061	13.52993574
15:05:27	29 17 00	081 12 06	2100	134	-0.49704	6.62388	13.50792374
15:05:31	29 17 02	081 12 17	2100	135	-0.65737	6.65715	13.49243433
15:05:36	29 17 06	081 12 28	2100	131	-0.81769	6.72367	13.51086644
15:05:40	29 17 09	081 12 39	2100	123	-0.97802	6.77357	13.51547044
15:05:45	29 17 12	081 12 49	2100	147	-1.12376	6.82347	13.52585551
15:05:50	29 17 17	081 13 01	2100	131	-1.29865	6.90664	13.56322639
15:05:54	29 17 22	081 13 11	2100	112	-1.44438	6.9898	13.60988411
15:05:59	29 17 26	081 13 20	2100	148	-1.57554	7.05634	13.64539882
15:06:03	29 17 32	081 13 30	2100	143	-1.72126	7.15614	13.71191391
15:06:08	29 17 39	081 13 40	2100	129	-1.86697	7.27256	13.79667407
15:06:13	29 17 45	081 13 49	2100	128	-1.99811	7.37236	13.86976648
15:06:17	29 17 51	081 13 58	2100	131	-2.12924	7.47216	13.94442516
15:06:22	29 17 58	081 14 06	2100	111	-2.24579	7.58859	14.03942269
15:06:27	29 18 06	081 14 10	2100	134	-2.30403	7.72162	14.16126531
15:06:31	29 18 16	081 14 12	2100	124	-2.33311	7.88789	14.32089256
15:06:36	29 18 26	081 14 11	2100	112	-2.31848	8.05415	14.48741101
15:06:40	29 18 33	081 14 06	2100	124	-2.24557	8.1705	14.613734
15:06:45	29 18 42	081 14 01	2100	106	-2.17266	8.32011	14.77307595
15:06:50	29 18 46	081 13 53	2100	121	-2.05606	8.38658	14.85786868
15:06:54	29 18 52	081 13 45	2100	109	-1.93946	8.4863	14.97612233
15:06:59	29 18 55	081 13 36	2200	105	-1.80831	8.53617	15.04863906
15:07:03	29 18 57	081 13 27	2200	104	-1.67716	8.56939	15.10576527
15:07:08	29 18 57	081 13 18	2100	112	-1.54601	8.56931	15.13124845
15:07:13	29 18 56	081 13 08	2200	105	-1.40031	8.5527	15.14468054
15:07:17	29 18 54	081 12 59	2200	107	-1.26917	8.51941	15.14007094
15:07:22	29 18 51	081 12 50	2200	97	-1.13804	8.46951	15.12048714
15:07:27	29 18 47	081 12 43	2200	117	-1.03605	8.40299	15.07919491
15:07:31	29 18 43	081 12 34	2200	103	-0.90491	8.33646	15.04581696
15:07:36	29 18 39	081 12 26	2200	111	-0.78835	8.26994	15.01014633
15:07:40	29 18 33	081 12 19	2200	105	-0.68635	8.17017	14.93970508
15:07:45	29 18 28	081 12 11	2200	113	-0.56978	8.08703	14.89022113
15:07:50	29 18 25	081 12 02	2200	108	-0.43863	8.03714	14.8779398
15:07:54	29 18 24	081 11 53	2200	111	-0.30748	8.0205	14.89883772
15:07:59	29 18 24	081 11 43	2100	119	-0.16176	8.02046	14.94102737
15:08:03	29 18 26	081 11 33	2100	98	-0.01603	8.05371	15.01624551
15:08:08	29 18 28	081 11 24	2100	121	0.11512	8.08696	15.08804684
15:08:13	29 18 29	081 11 14	2100	117	0.26084	8.10359	15.14958156
15:08:18	29 18 32	081 11 04	2100	111	0.40657	8.15348	15.24372737
15:08:22	29 18 32	081 10 54	2100	114	0.55229	8.15349	15.29181778
15:08:27	29 18 33	081 10 44	2100	114	0.69801	8.17013	15.35676611
15:08:32	29 18 34	081 10 34	2100	108	0.84373	8.18678	15.4228451
15:08:36	29 18 36	081 10 25	2100	104	0.97487	8.22005	15.50033909
15:08:41	29 18 37	081 10 16	2100	115	1.10602	8.2367	15.5631449
15:08:45	29 18 37	081 10 06	2100	126	1.25174	8.23672	15.61678857
15:08:50	29 18 36	081 09 55	2100	102	1.41203	8.22013	15.66178936
15:08:54	29 18 36	081 09 46	2100	111	1.54318	8.22016	15.71227918
15:08:59	29 18 35	081 09 36	2100	107	1.68891	8.20358	15.75421903
15:09:04	29 18 35	081 09 27	2100	109	1.82006	8.20361	15.80671101
15:09:08	29 18 35	081 09 17	2100	106	1.96578	8.20366	15.86611752
15:09:13	29 18 34	081 09 08	2100	122	2.09693	8.18708	15.90543387
15:09:18	29 18 33	081 08 57	2100	94	2.25723	8.17051	15.95818595
15:09:22	29 18 31	081 08 49	2100	125	2.37382	8.1373	15.97839832
15:09:27	29 18 31	081 08 38	2100	103	2.53412	8.13736	16.04864652
15:09:31	29 18 30	081 08 29	2100	105	2.66527	8.12079	16.09222663
15:09:36	29 18 28	081 08 20	2100	112	2.79644	8.0876	16.12198948
15:09:41	29 18 27	081 08 10	2100	117	2.94217	8.07104	16.17431573
15:09:45	29 18 26	081 08 00	2100	111	3.0879	8.05448	16.22779889
15:09:50	29 18 25	081 07 50	2000	92	3.23362	8.03789	16.28239643
15:09:55	29 18 26	081 07 42		114	3.34987	8.05381	16.35227886

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15:09:59	29 18 26	081 07 32	2200	103	3.49595	8.05474	16.42423269
15:10:04	29 18 27	081 07 23	2200	101	3.62709	8.07144	16.50343694
15:10:09	29 18 28	081 07 14	2200	107	3.75824	8.08815	16.58333043
15:10:13	29 18 28	081 07 05	2200	114	3.88939	8.08823	16.64955726
15:10:18	29 18 30	081 06 55	2200	103	4.03509	8.12157	16.75256443
15:10:22	29 18 31	081 06 46	2200	101	4.16623	8.13829	16.83450741
15:10:27	29 18 32	081 06 37	2200	114	4.29737	8.155	16.91707808
15:10:32	29 18 33	081 06 27	2200	108	4.44308	8.17173	17.00799927
15:10:36	29 18 34	081 06 18	2200	100	4.57422	8.18845	17.09189717
15:10:41	29 18 35	081 06 09	2200	100	4.70535	8.20518	17.17640582
15:10:46	29 18 35	081 06 00	2200	94	4.8365	8.20528	17.24757519
15:10:50	29 18 33	081 05 52	2200	105	4.95311	8.17212	17.28367184
15:10:55	29 18 29	081 05 44	2200	107	5.06974	8.10571	17.29292314
15:10:59	29 18 24	081 05 37	2100	113	5.17179	8.02263	17.28122462
15:11:04	29 18 17	081 05 31	2100	99	5.25933	7.90632	17.23494235
15:11:09	29 18 10	081 05 27	2100	109	5.31772	7.78998	17.17296343
15:11:13	29 18 02	081 05 25	2100	99	5.34698	7.657	17.08129579
15:11:18	29 17 54	081 05 25	2100	99	5.3471	7.52399	16.97317823
15:11:22	29 17 47	081 05 28	2100	113	5.30348	7.40757	16.85321464
15:11:27	29 17 39	081 05 32	2000	124	5.24527	7.27447	16.71124723
15:11:32	29 17 31	081 05 38	2000	115	5.15794	7.14139	16.55224305
15:11:36	29 17 26	081 05 46	2000	117	5.04141	7.05817	16.4165291
15:11:41	29 17 21	081 05 55	2000	110	4.91031	6.97493	16.2724448
15:11:46	29 17 16	081 06 03	1900	107	4.79375	6.89167	16.13697439
15:11:50	29 17 12	081 06 11	1900	135	4.6772	6.82508	16.01526131
15:11:55	29 17 08	081 06 22	1900	108	4.51692	6.75846	15.86867596
15:11:59	29 17 03	081 06 29	1900	135	4.41495	6.67525	15.74214189
15:12:04	29 16 59	081 06 40	1800	114	4.25465	6.6086	15.59628862
15:12:08	29 16 54	081 06 48		122	4.13774	6.52483	15.46119087
15:12:13	29 16 50	081 06 58	1800	121	3.99238	6.4588	15.32506359
15:12:18	29 16 45	081 07 07	1700	112	3.86123	6.37555	15.18292957
15:12:22	29 16 41	081 07 16	1700	128	3.73009	6.30897	15.05497576
15:12:27	29 16 37	081 07 26	1700	127	3.58436	6.24238	14.91939801
15:12:32	29 16 32	081 07 36	1700	109	3.43864	6.15917	14.77034268
15:12:36	29 16 29	081 07 45	1600	134	3.30747	6.10919	14.65754061
15:12:41	29 16 24	081 07 55	1600	100	3.16174	6.02598	14.5093346
15:12:45	29 16 19	081 08 02	1600	112	3.05974	5.9428	14.38469655
15:12:50	29 16 14	081 08 10	1600	119	2.94317	5.85962	14.25251001
15:12:55	29 16 07	081 08 16	1600	113	2.85576	5.74319	14.10751152
15:12:59	29 16 00	081 08 22	1600	107	2.76834	5.62677	13.96252859
15:13:04	29 15 53	081 08 27	1600	123	2.69551	5.51036	13.82521634
15:13:08	29 15 44	081 08 31	1600	99	2.63726	5.3607	13.66727872
15:13:13	29 15 37	081 08 35	1600	119	2.57899	5.2443	13.53764394
15:13:18	29 15 30	081 08 41	1700	108	2.49158	5.12791	13.39266603
15:13:22	29 15 23	081 08 47	1700	118	2.40415	5.01149	13.2476648
15:13:27	29 15 16	081 08 53	1700	108	2.31672	4.89508	13.10268523
15:13:31	29 15 10	081 08 59	1700	115	2.22927	4.79529	12.97186911
15:13:36	29 15 03	081 09 06	1700	133	2.12726	4.67887	12.81930811
15:13:41	29 14 55	081 09 13	1700	120	2.02524	4.54583	12.65260009
15:13:45	29 14 48	081 09 19	1700	102	1.93779	4.42942	12.50769515
15:13:50	29 14 41	081 09 24	1700	125	1.86492	4.31302	12.37037925
15:13:54	29 14 33	081 09 29	1700	95	1.79206	4.17999	12.21885807
15:13:59	29 14 26	081 09 33	1700	140	1.73376	4.06359	12.08911824
15:14:04	29 14 17	081 09 38	1700	123	1.6609	3.91394	11.92342393
15:14:08	29 14 08	081 09 43	1700	110	1.58802	3.76429	11.75774035
15:14:13	29 14 01	081 09 48	1700	120	1.51514	3.64789	11.62041304
15:14:18	29 13 53	081 09 54	1700	111	1.42768	3.51486	11.46128882
15:14:22	29 13 46	081 09 59	1600	133	1.35478	3.39845	11.32394327
15:14:27	29 13 37	081 10 04	1600	97	1.2819	3.2488	11.15827125
15:14:31	29 13 30	081 10 07	1600	113	1.23817	3.13241	11.03623366
15:14:36	29 13 22	081 10 11	1600	126	1.17986	2.9994	10.89243974
15:14:41	29 13 13	081 10 16	1600	101	1.10696	2.84975	10.72684833
15:14:45	29 13 06	081 10 20	1600	121	1.04865	2.73336	10.5972257
15:14:50	29 12 58	081 10 25	1600	113	0.97574	2.60034	10.44577701
15:14:54	29 12 51	081 10 31	1600	96	0.88825	2.48395	10.30071973

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15:14:59	29 12 45	081 10 36	1600	123	0.81534	2.38418	10.17749013
15:15:04	29 12 38	081 10 43	1600	102	0.71325	2.26779	10.02477525
15:15:08	29 12 31	081 10 48	1600	105	0.64033	2.1514	9.887431612
15:15:13	29 12 25	081 10 54	1600	129	0.55282	2.05164	9.756587582
15:15:17	29 12 17	081 11 00	1600	99	0.46532	1.91863	9.597452574
15:15:22	29 12 11	081 11 05	1600	104	0.39239	1.81887	9.474281693
15:15:27	29 12 04	081 11 10	1600	116	0.31946	1.70248	9.336937128
15:15:31	29 11 57	081 11 16	1600	110	0.23194	1.5861	9.191989647
15:15:36	29 11 50	081 11 21	1600	100	0.15901	1.46972	9.054656095
15:15:40	29 11 45	081 11 28	1600	119	0.05689	1.38659	8.930604384
15:15:45	29 11 38	081 11 34	1600	111	-0.03064	1.27021	8.785748099
15:15:49	29 11 32	081 11 41	1600	120	-0.13276	1.17045	8.647704276
15:15:54	29 11 25	081 11 47	1700	103	-0.22029	1.05408	8.502947688
15:15:58	29 11 19	081 11 53	1700	113	-0.30783	0.95433	8.372530621
15:16:03	29 11 13	081 12 00	1700	110	-0.40996	0.85458	8.234827597
15:16:07	29 11 06	081 12 05	1700	116	-0.48292	0.7382	8.097540398
15:16:12	29 10 59	081 12 11	1700	118	-0.57046	0.62183	7.952943591
15:16:17	29 10 51	081 12 16	1700	101	-0.64343	0.48883	7.801283657
15:16:21	29 10 44	081 12 20	1700	114	-0.7018	0.37246	7.671339664
15:16:26	29 10 36	081 12 23	1700	121	-0.74559	0.23946	7.534409211
15:16:30	29 10 28	081 12 28	1700	122	-0.81856	0.10646	7.382770889
15:16:34	29 10 20	081 12 32	1700	103	-0.87694	-0.02654	7.238544366
15:16:39	29 10 13	081 12 36	1700	118	-0.93533	-0.14291	7.108657562
15:16:44	29 10 05	081 12 41	1700	116	-1.00831	-0.27591	6.9570343
15:16:48	29 09 57	081 12 45	1700	99	-1.0667	-0.4089	6.812889079
15:16:53	29 09 50	081 12 48	1700	132	-1.1105	-0.52528	6.690543591
15:16:57	29 09 41	081 12 53	1700	105	-1.18349	-0.67489	6.524731069
15:17:02	29 09 34	081 12 58	1700	118	-1.25648	-0.79126	6.387384022
15:17:06	29 09 26	081 13 03	1700	106	-1.32947	-0.92425	6.235813246
15:17:11	29 09 19	081 13 07	1700	124	-1.38787	-1.04062	6.106027408
15:17:15	29 09 11	081 13 13	1700	101	-1.47547	-1.1736	5.946896477
15:17:20	29 09 04	081 13 17	1700	111	-1.53387	-1.28997	5.817118538
15:17:25	29 08 56	081 13 22	1700	114	-1.60688	-1.42296	5.665561093
15:17:29	29 08 49	081 13 27	1700	113	-1.67989	-1.53932	5.528203432
15:17:34	29 08 41	081 13 31	1700	124	-1.7383	-1.67231	5.384284598
15:17:39	29 08 33	081 13 37	1700	107	-1.82591	-1.80529	5.225119386
15:17:43	29 08 26	081 13 42	1700	110	-1.89893	-1.92165	5.087752812
15:17:48	29 08 19	081 13 47	1700	113	-1.97195	-2.03801	4.950386642
15:17:52	29 08 12	081 13 53	1700	127	-2.05956	-2.15436	4.805426934
15:17:57	29 08 04	081 13 59	1700	118	-2.14719	-2.28733	4.646284555
15:18:01	29 07 56	081 14 04	1700	124	-2.22022	-2.42031	4.494718304
15:18:06	29 07 48	081 14 10	1700	105	-2.30785	-2.55329	4.335566246
15:18:11	29 07 41	081 14 15	1700	124	-2.38088	-2.66964	4.198211057
15:18:15	29 07 33	081 14 20	1700	119	-2.45393	-2.80262	4.046632712
15:18:20	29 07 25	081 14 26	1700	115	-2.54157	-2.93559	3.88748552
15:18:25	29 07 17	081 14 30	1700	107	-2.60002	-3.06857	3.743525027
15:18:29	29 07 10	081 14 35	1700	118	-2.67306	-3.18492	3.606156311
15:18:34	29 07 02	081 14 40	1700	111	-2.74612	-3.31789	3.45461684
15:18:38	29 06 54	081 14 44	1700	115	-2.80457	-3.45087	3.310800079
15:18:43	29 06 46	081 14 48	1600	113	-2.86302	-3.58383	3.167133311
15:18:48	29 06 38	081 14 52	1600	124	-2.92148	-3.71681	3.023593896
15:18:52	29 06 30	081 14 58	1500	113	-3.00913	-3.84976	2.864361125
15:18:57	29 06 22	081 15 02	1500	110	-3.0676	-3.98273	2.720988227
15:19:01	29 06 15	081 15 07	1400	101	-3.14065	-4.09906	2.583650094
15:19:06	29 06 08	081 15 11	1300	113	-3.1991	-4.21538	2.454377972
15:19:11	29 06 01	081 15 17	1200	104	-3.28675	-4.3317	2.308999888
15:19:15	29 05 54	081 15 22	1100	95	-3.3598	-4.44801	2.171688969
15:19:20	29 05 48	081 15 27	1000	111	-3.43285	-4.5477	2.048249047
15:19:24	29 05 41	081 15 32	900	114	-3.50591	-4.66401	1.910928239
15:19:29	29 05 34	081 15 38	900	94	-3.59359	-4.78034	1.765565521
15:19:34	29 05 28	081 15 43	800	107	-3.66664	-4.88002	1.642180576
15:19:38	29 05 21	081 15 47	700	111	-3.7251	-4.99634	1.512823376
15:19:43	29 05 14	081 15 53	600	90	-3.81277	-5.11264	1.367497786
15:19:48	29 05 08	081 15 57	600	114	-3.87124	-5.21235	1.252043407
15:19:52	29 05 01	081 16 03	600	90	-3.95894	-5.32867	1.106717334

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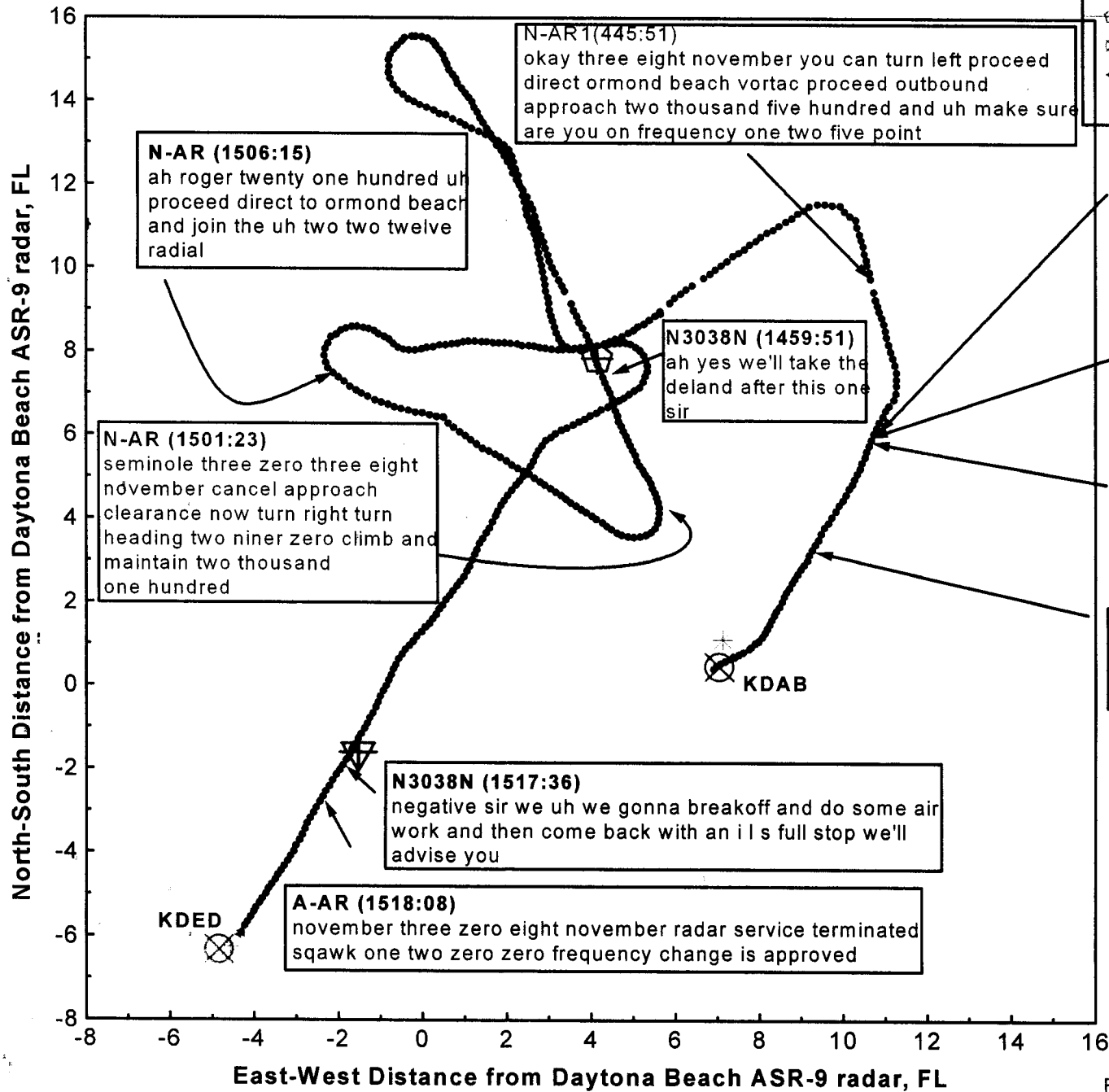
15:19:57	29 04 55	081 16 07	500	110	-4.01739	-5.42835	0.991277487
15:20:01	29 04 48	081 16 12	500	107	-4.09049	-5.54468	0.853907151
15:20:06	29 04 41	081 16 17	600	88	-4.1636	-5.66103	0.716522527
15:20:11	29 04 35	081 16 21	600	108	-4.22209	-5.76074	0.601115279

Table 5

CDR data of last five returns of BCN 1200

UTC Time			Latitude			Longitude			G_SPD	E_NM	N_NM	DIS	RW23		
HH	MM	SS	RNG	ACP	ALT	M	S	D	D	M	S	knots	NM	NM	NM
15:20:15	7.39	2448	7000	29	04	27	081	16	27	96	-4.311	-5.896	0.4396		
15:20:20	7.36	2451	600	29	04	21	081	16	31	73	-4.368	-5.993	0.3266		
15:20:20	7.42	2447	600	29	04	21	081	16	31	73	-4.368	-5.993	0.3266		
15:20:24	7.34	2443		29	04	23	081	16	25		-4.281	-5.950	0.4081		
15:20:24	7.28	2446		29	04	23	081	16	25		-4.281	-5.950	0.4081		

North Range vs. East Range (14:39:52-15:21:00 UTC) (Ground Track N3038N)



- N3038N
- + Missed approach to runway
- ▽ DONGS Intersection
- ⊕ Ormond Beach VORTAC
- ⊗ Airport
- ◀ Either N3038N or N153ER

N-AR (1506:15)
ah roger twenty one hundred uh proceed direct to ormond beach and join the uh two two twelve radial

N-AR (1501:23)
seminole three zero three eight november cancel approach clearance now turn right turn heading two niner zero climb and maintain two thousand one hundred

N-AR1(445:51)
okay three eight november you can turn left proceed direct ormond beach vortac proceed outbound approach two thousand five hundred and uh make sure are you on frequency one two five point

N3038N (1459:51)
ah yes we'll take the deland after this one sir

N3038N (1443:58)
i understand and ah let's go ahead and do ah v o r ah one six and ah we'll do a new smyrna n d b approach ah two niner sir.

N-AR (1443:52)
okay three eight november delands saturated right now unable any approach at deland let me rephrase that unable any approach at deland

N3038N (1443:47)
ah three eight november we like to have ah n d b runway thirty deland if possible

N-AR (1442:19)
november three zero three eight november unable vor uh vor deland approach

N3038N (1517:36)
negative sir we uh we gonna breakoff and do some air work and then come back with an i l s full stop we'll advise you

A-AR (1518:08)
november three zero eight november radar service terminated sqawk one two zero zero frequency change is approved

Figure 1-a

North Range vs. East Range (14:59:00-15:21:00 UTC)
 (Ground Track N3038N)

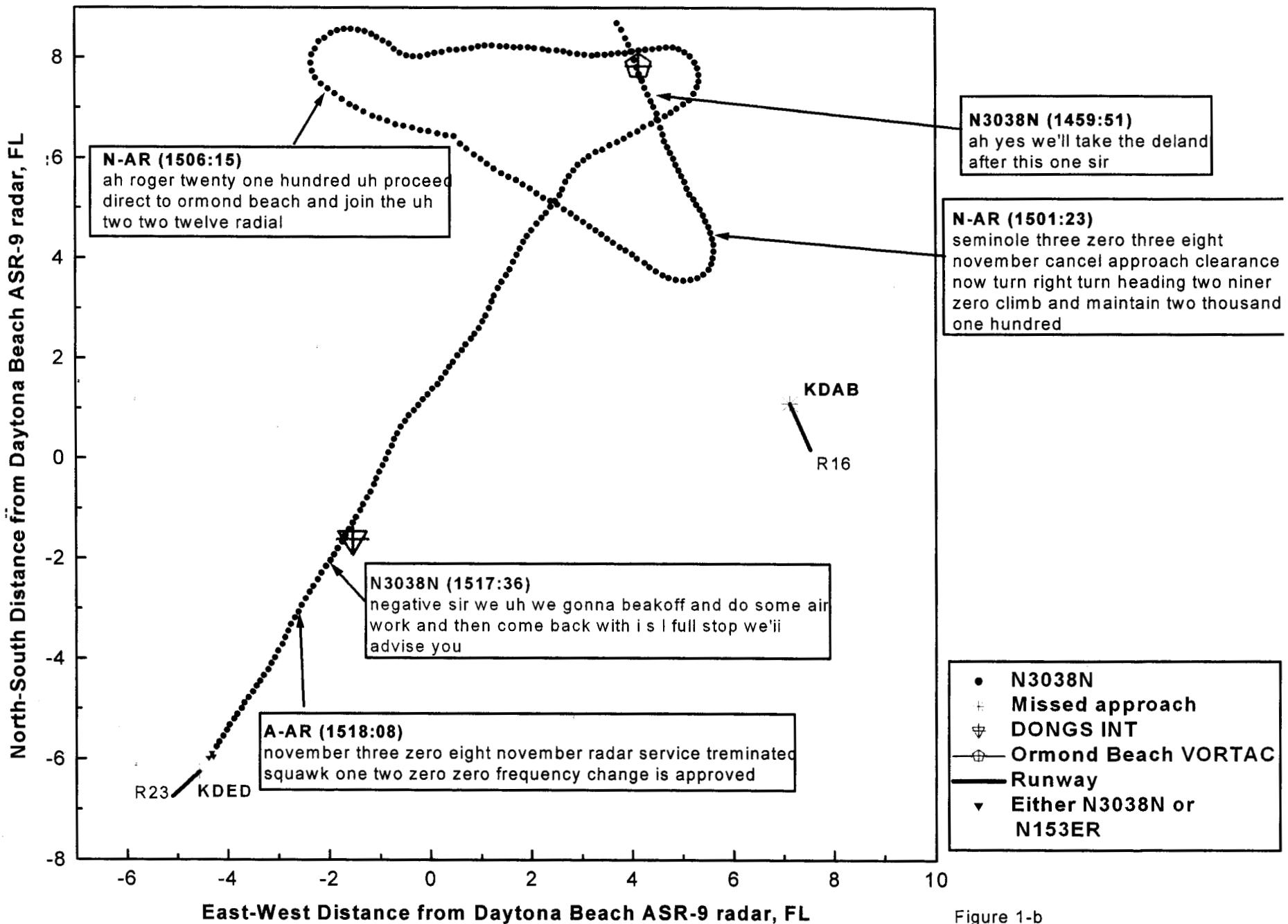


Figure 1-b

North Range vs. East Range (15:12:00-15:21:00 UTC)
 (Ground Track N3038N)

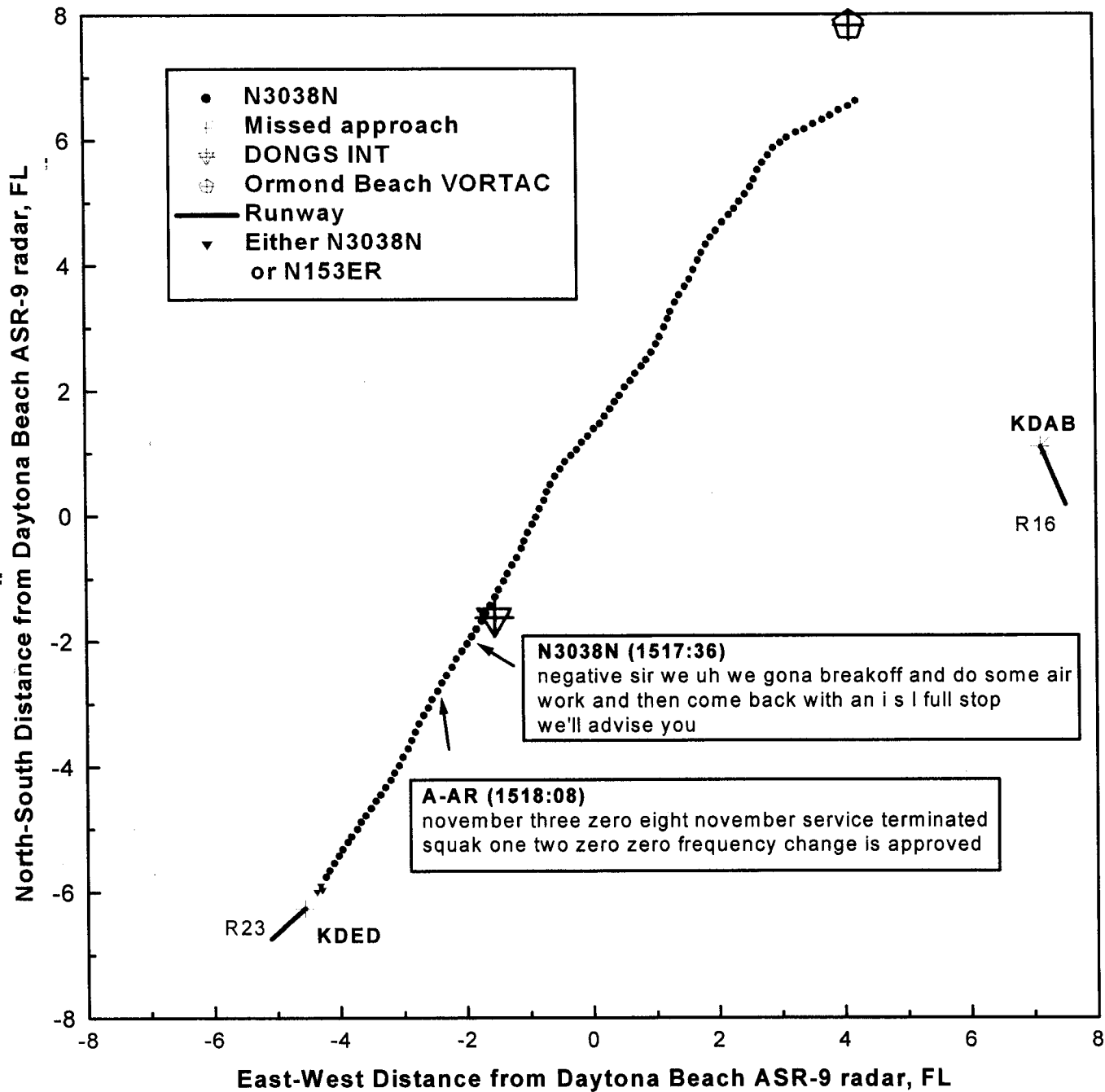


Figure 1-c

North Range vs. East Range (15:16:00-15:21:00 UTC)
(Ground Track N3038N)

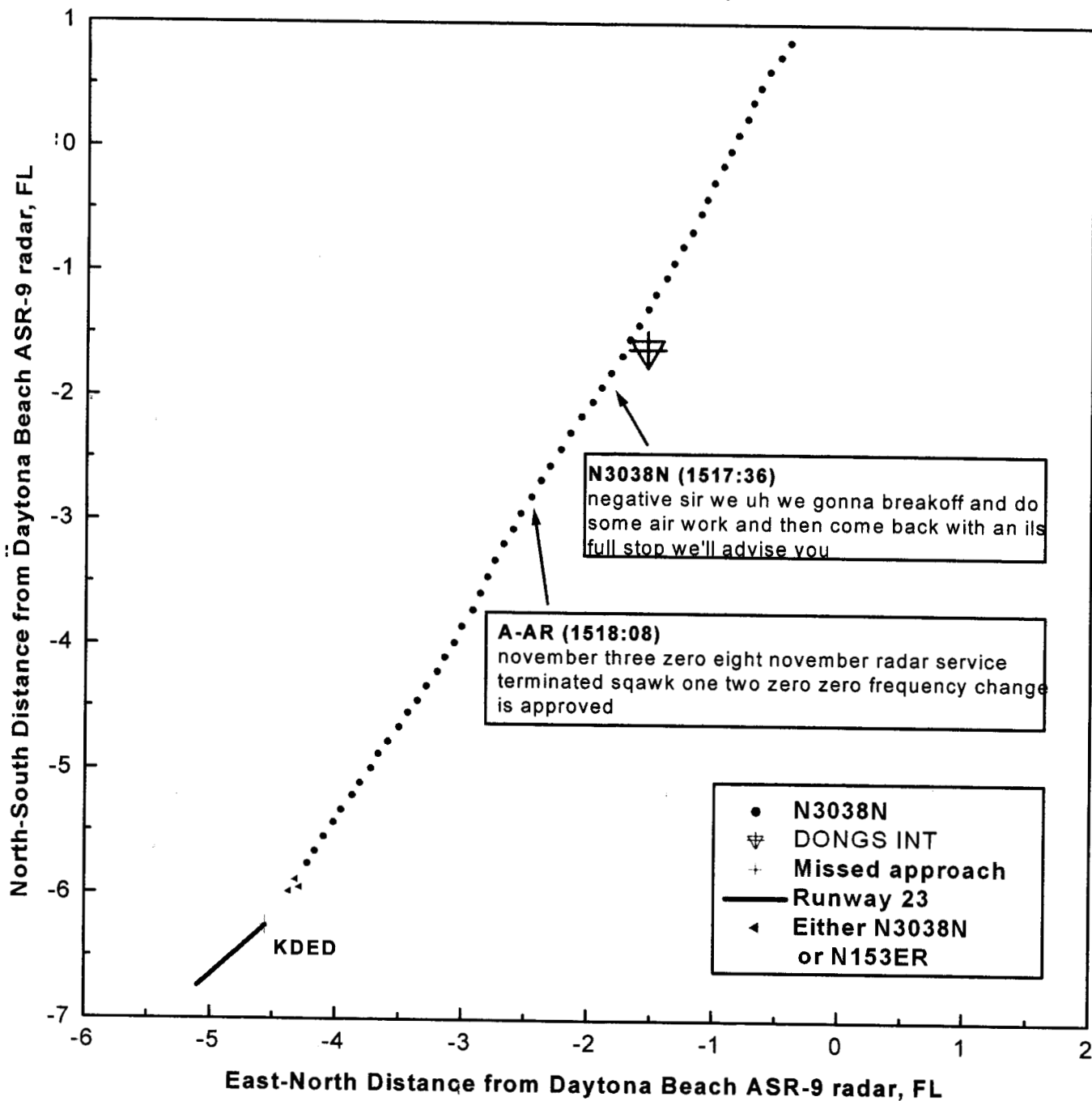


Figure 1-d

North Range vs. East Range (14:22:00-15:21:00 UTC)
 (Ground Track N153ER)

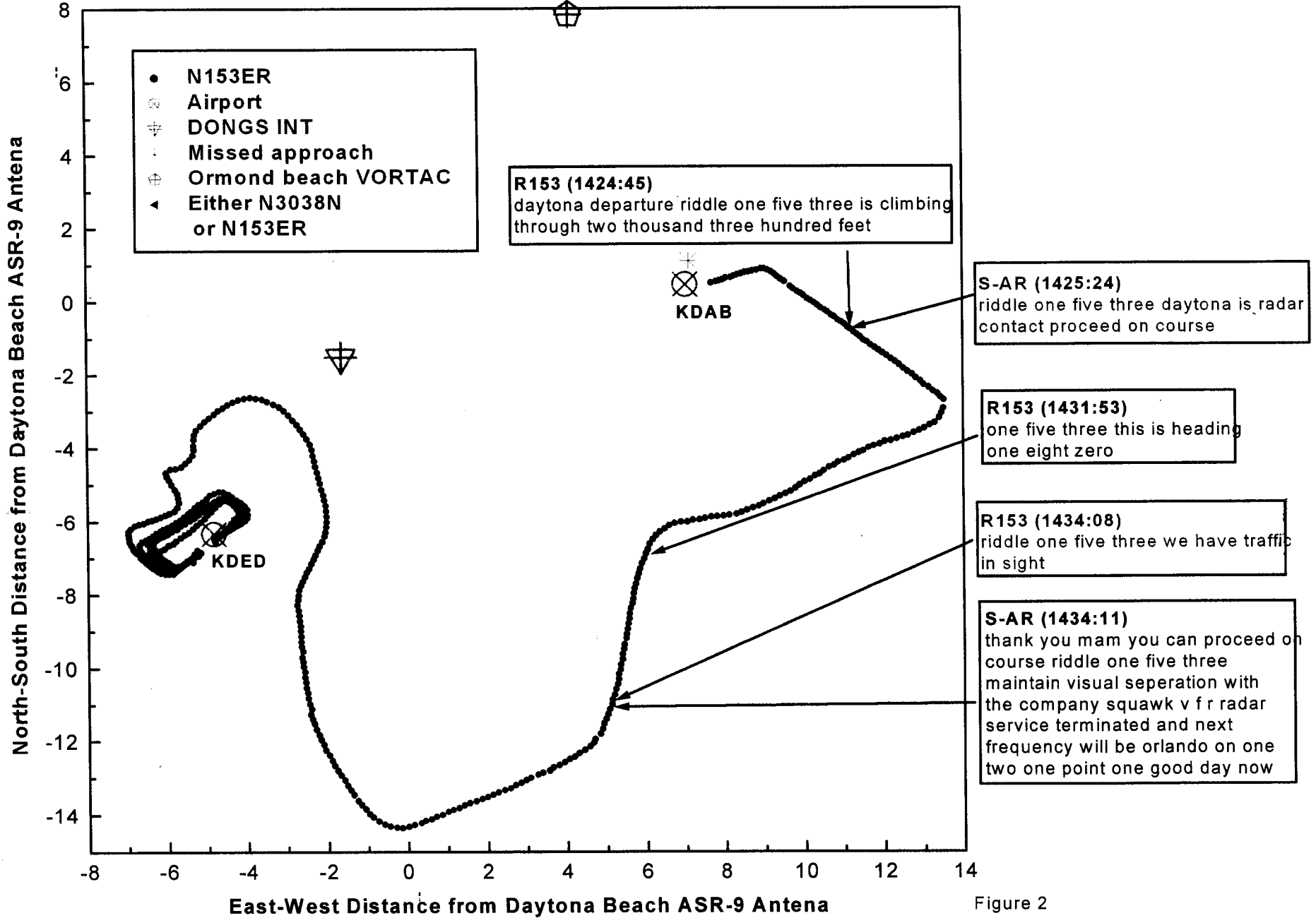


Figure 2

North Range vs. East Range (15:12:00-15:21:00 UTC)
 (Ground Track N3038N and N153ER)

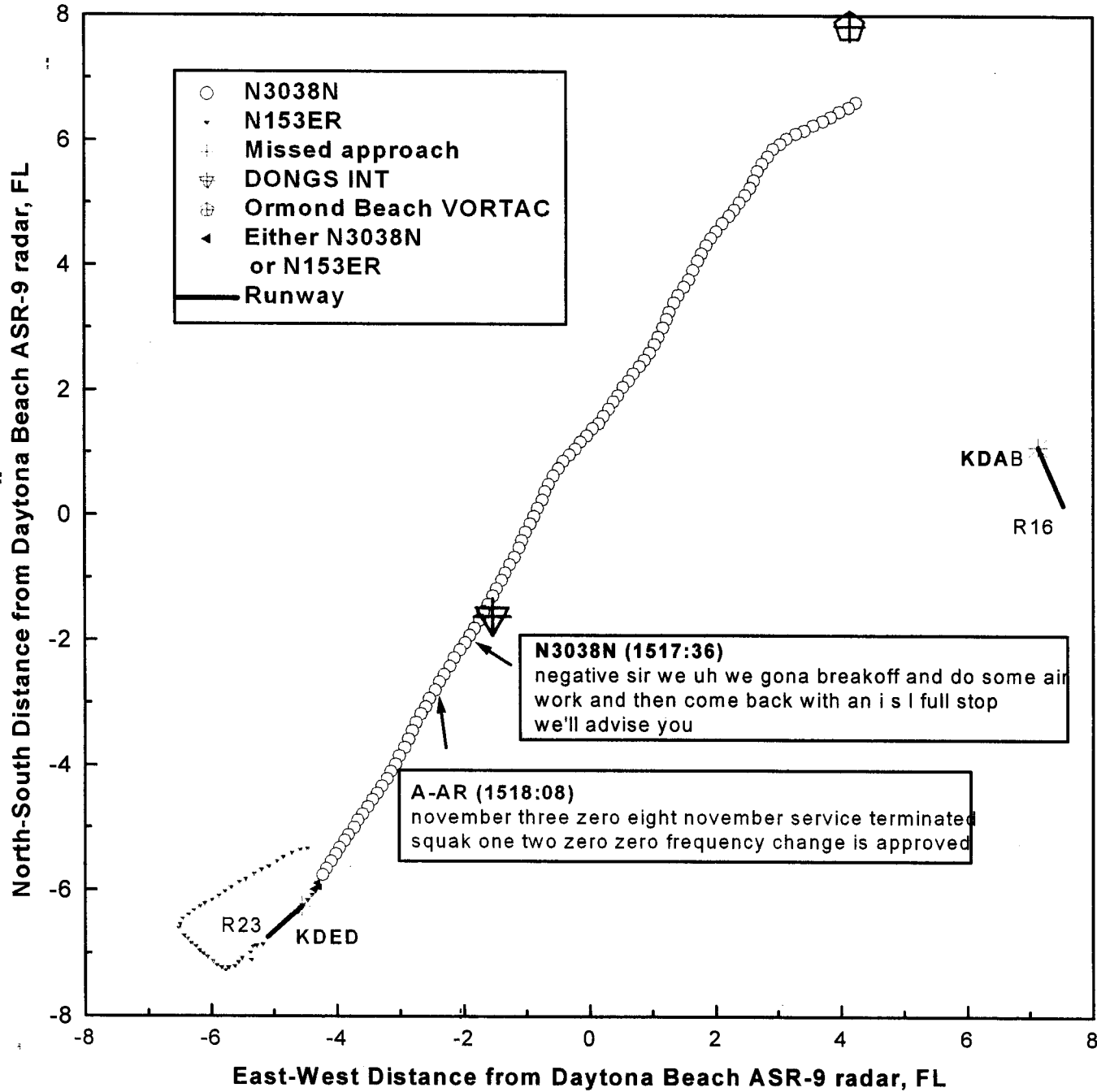


Figure 3

North Range vs. East Range (15:16:00-15:21:00 UTC)
 (Ground Track N3038N and N153ER)

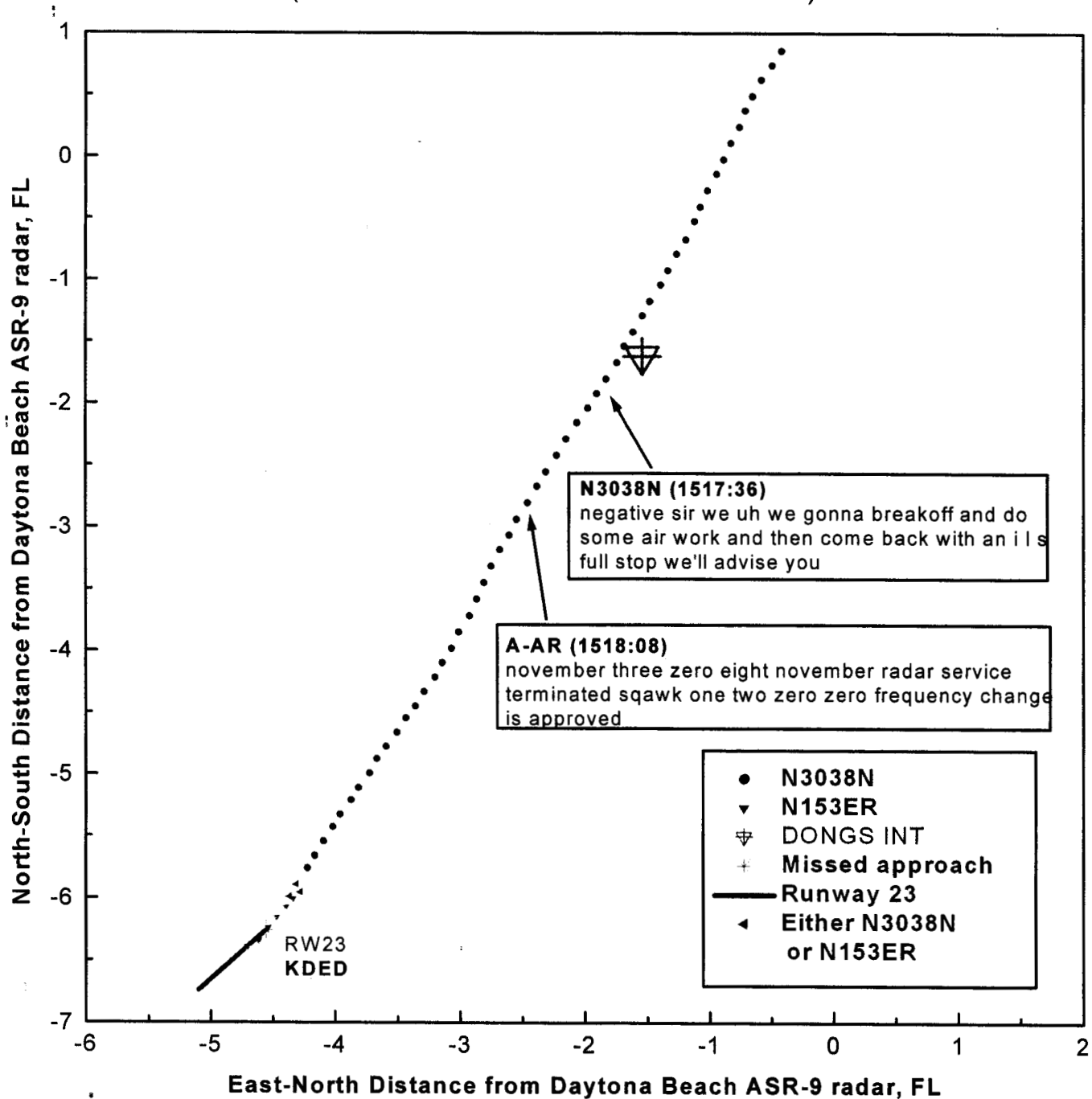


Figure 4

North Range vs. East Range (15:16:00-15:21:00 UTC)
 (Ground Track N3038N and N153ER)

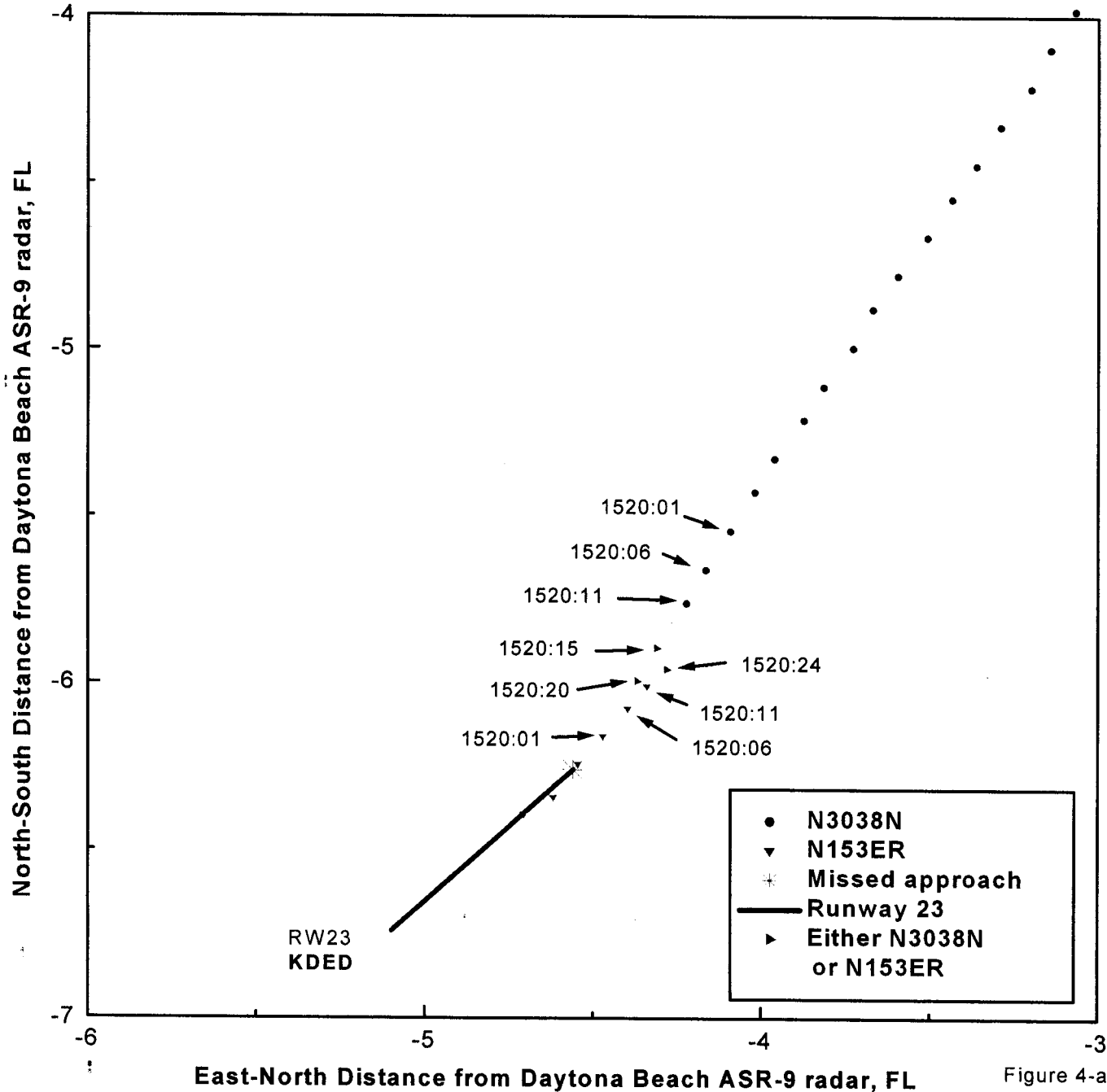


Figure 4-a

Altitude vs. Distance From Threshold (14:39:52-15:21:00)

Profile View (N3038N)

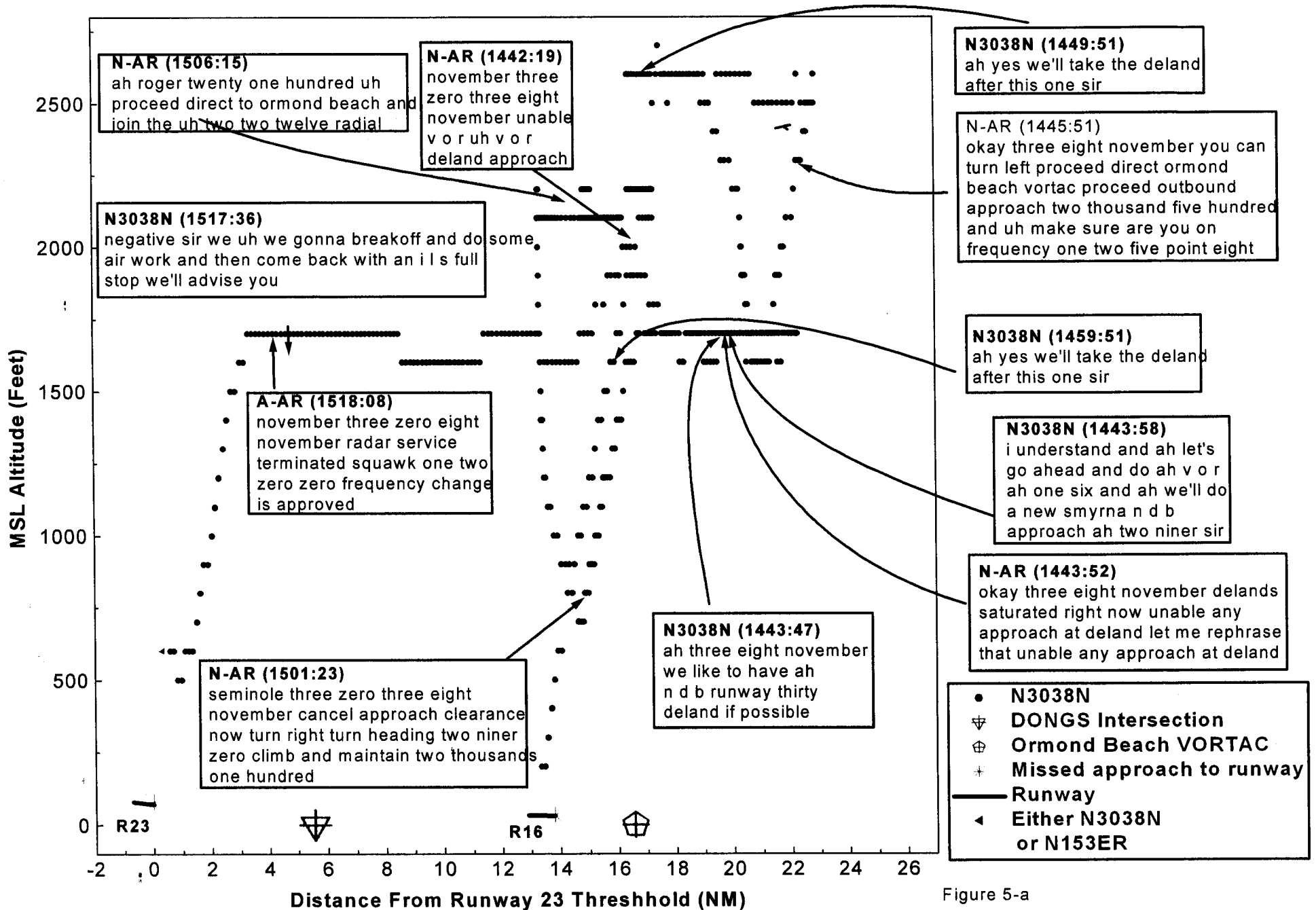


Figure 5-a

Altitude vs. Distance from Threshold (14:59:00-15:21:00 UTC)

Profile View (N3038N)

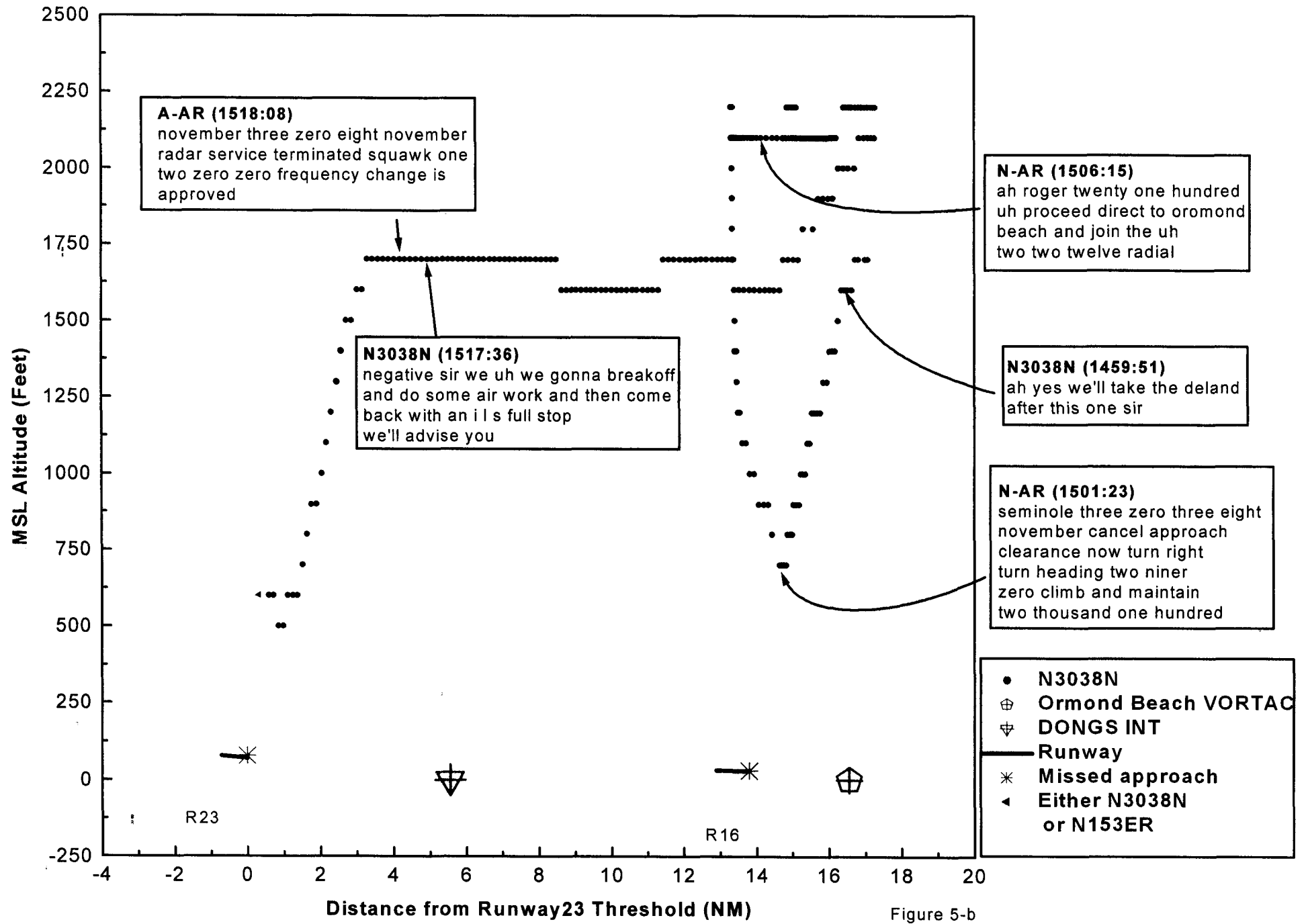


Figure 5-b

Altitude vs. Distance From Threshold

Profile View (N3038N (15:12:00-15:21:00) and N153ER(15:15:00-15:21:00))

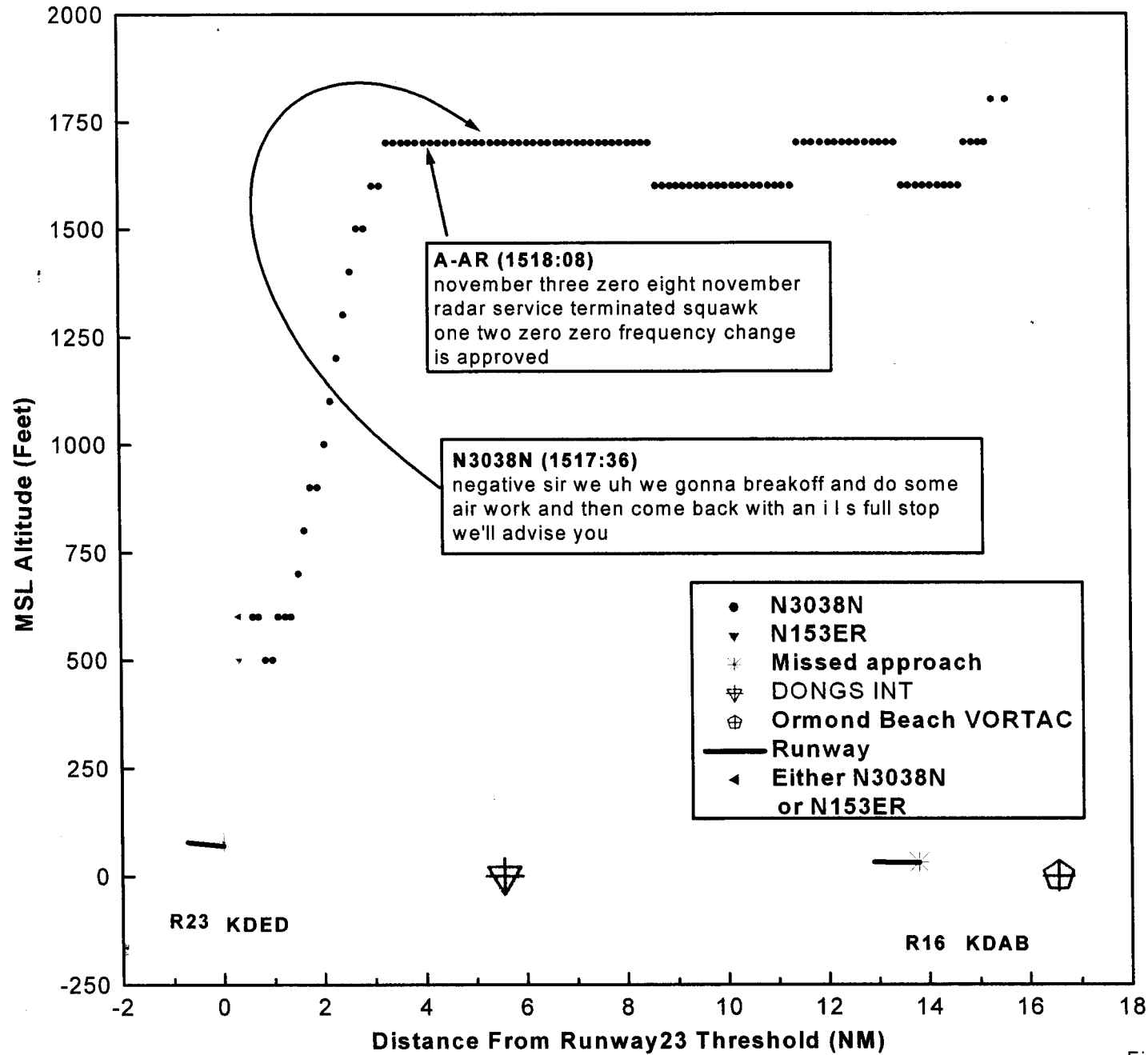


Figure 5-c

Altitude vs. Distance from Threshold (15:16:00-15:21:00 UTC)
 Profile View (N3038N and N153ER))

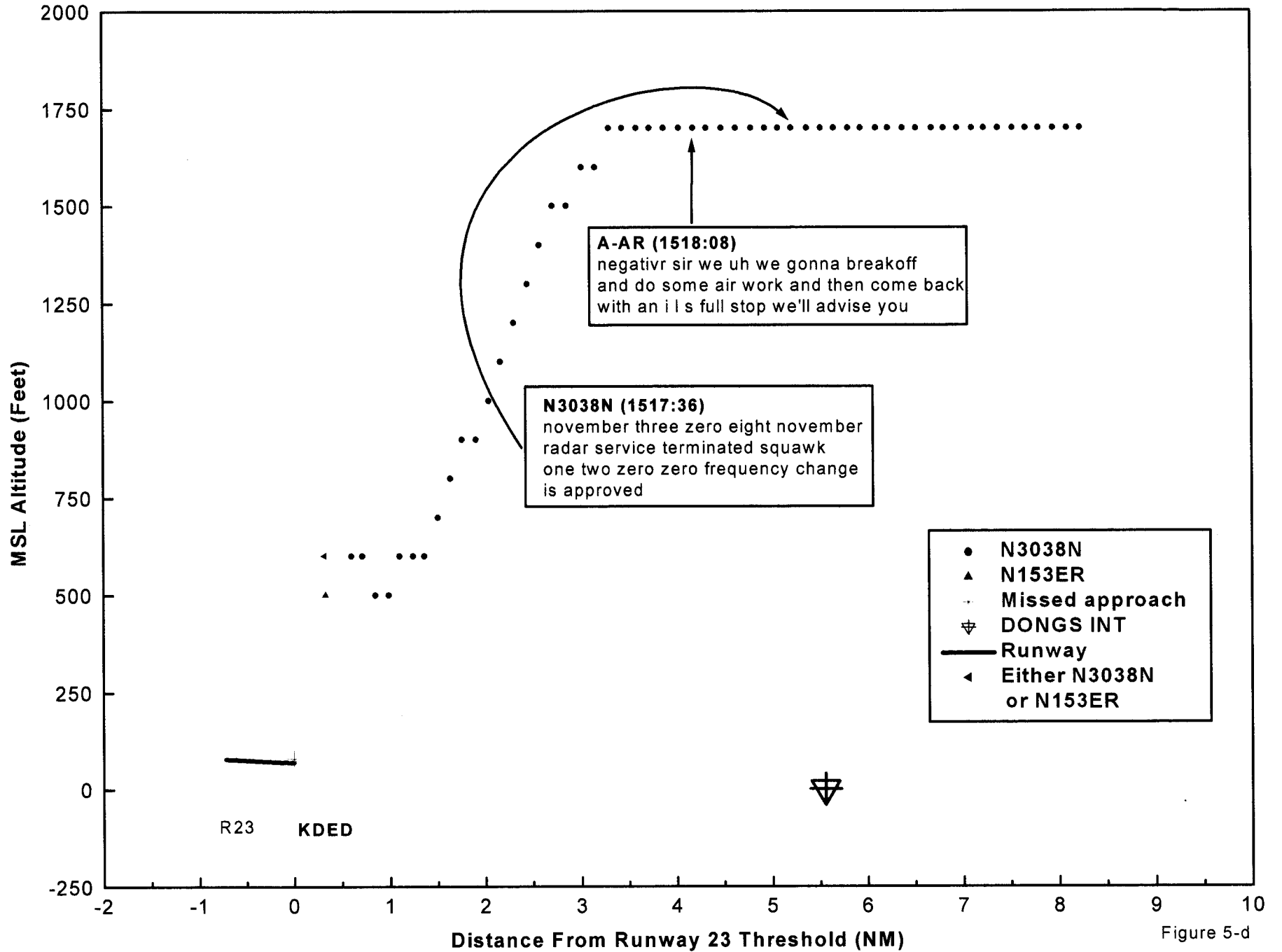


Figure 5-d

Altitude vs. Distance from Threshold (15:12:00-15:21:00 UTC)
Profile View (N3038N)

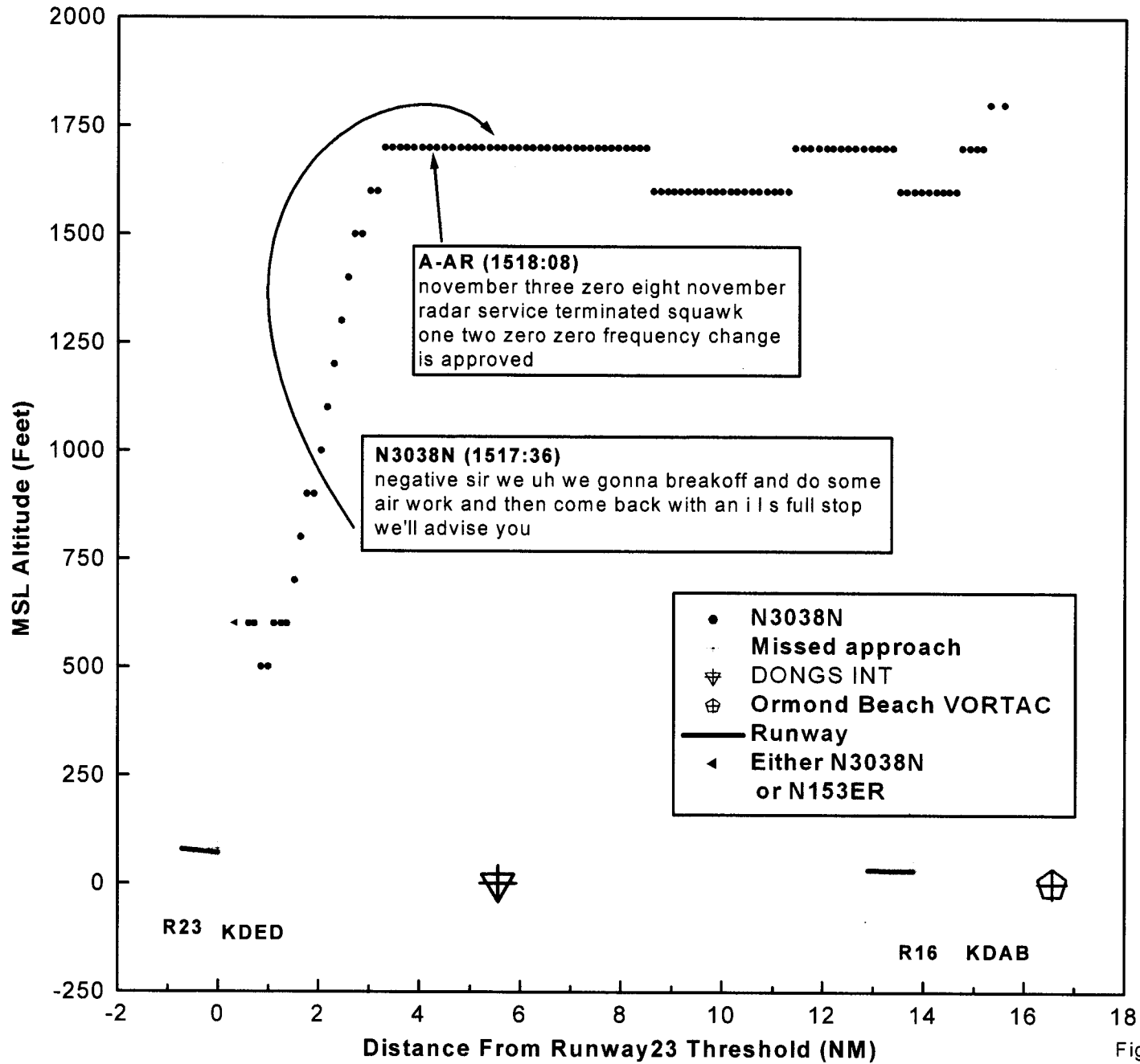


Figure 6

Altitude vs. Distance From Threshold (15:16:00-15:21:00 UTC)
Profile View (N3038N)

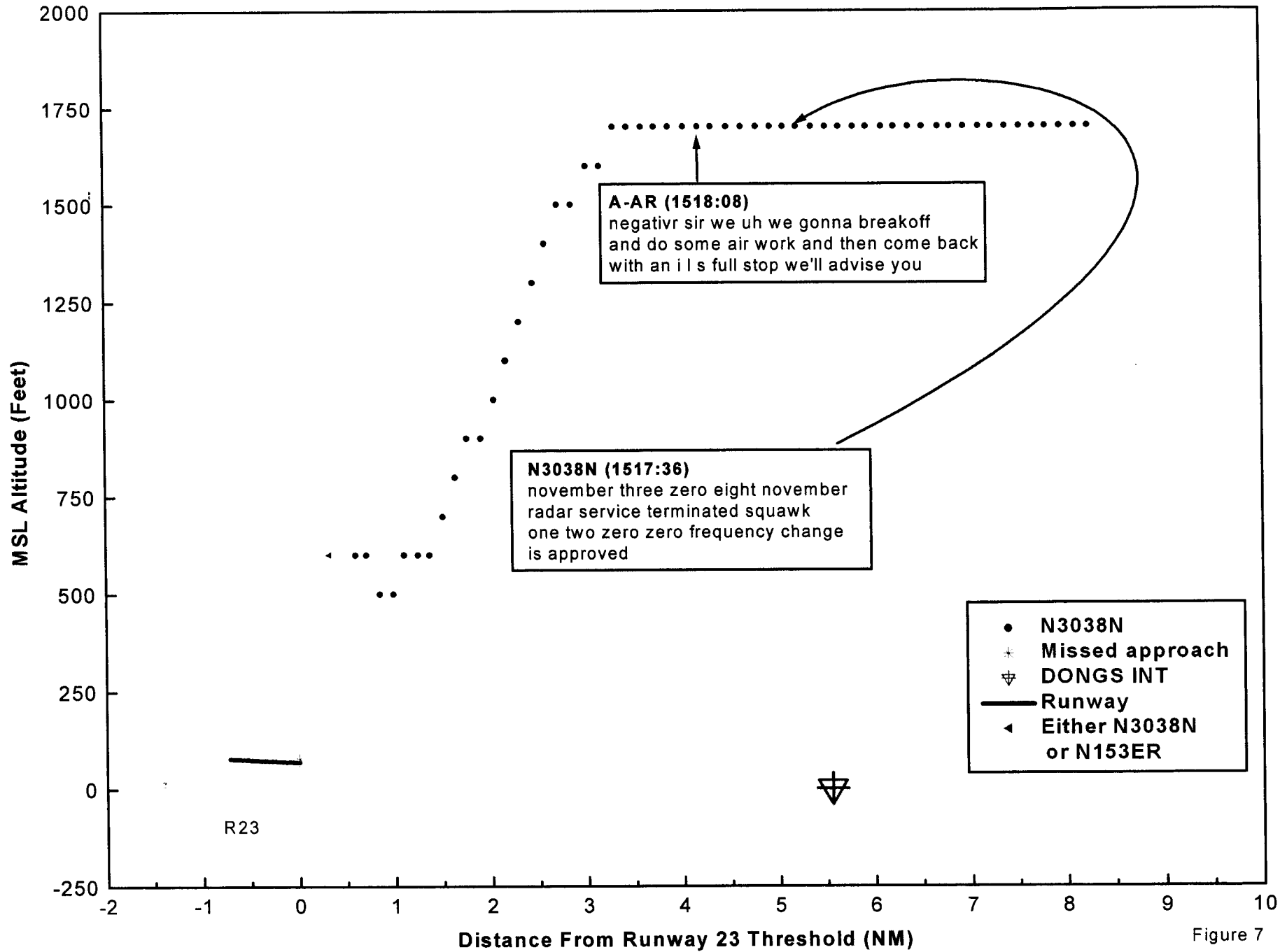


Figure 7