Chapter 2 - Orbit Overview

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Introduction to Chapter 2

This chapter gives an overview of the NIMS observations in the C3 Orbit.

The text on pages 3 and 4 summarizes the NIMS science objectives for C3. The NIMS calibrations are discussed on page 4. Early data return and C3 playback are discussed on page 5.

The table on pages 6 and 7 is a time-ordered listing of the NIMS Oapels for C3.

The plot on page 8 shows the geometry of the NIMS C3 observations using a north trajectory pole view projection. The plots on pages 9 and 10 show the geometry of the NIMS Satellite and Jupiter observations. The plot on page 11 shows the geometry of the NIMS C3 calibrations.

The spreadsheets on pages 13 and 14 summarize the NIMS resource usage for the NIMS C3 observations. The spreadsheet on page 12 summarizes various inputs for the NIMS C3 observations.

The table on pages 15 and 16 lists various NIMS C3 observing parameters: target latitude/longitude, range, cone angle, incidence angle (light), emission angle (view) and phase angle.

The tapemap on pages 17 through 21 shows the placement of the C3 observations on the spacecraft's tape recorder. The NIMS observation names are written with a larger type.

The timeline on pages 22 through 27 shows the preliminary C3 playback schedule.

The NIMS C3 mosaic designs are summarized on pages 28 through 32 in time-order.

NIMS C3 Science Overview

Io Science

NIMS will monitor Io’s volcanic activity within +/- 10 hours of Io closest approach. Both day-side and night-side observations will be taken in the search for chemical and thermal changes over a 20 hr period (CHEMIS and THRMAL). The Pele and Loki hot spots on Io’s night-side will be observed (VOLCAN). A surface mineralogy map will be obtained at Io closest approach (HRSPEC), which will be Galileo’s closest approach to Io during the tour. NIMS will also return a real time observatio of Io (RTIMON).

Europa Science

There is a non-targeted flyby of Europa in C3. There are three NIMS observations of Europa in C3. The first observation (PHINEA), a global mosaic, is one in a series of observations over the entire tour, planned to map composition on a global scale. The second observation (LINEA) provides a medium resolution view of an area of Europa surface laden with cracks, enabling a search for compositional contrasts. The final observation (ELIMB), which includes the limb, is optimized to search for possible outgassing or hot spots.

Ganymede Science

There are no NIMS Ganymede observations in the C3 orbit.

Callisto Science

Callisto is the target body for the C3 orbit. Callisto has never been observed at such close range with the IR capability of the NIMS instrument. C3 contains five NIMS observations of Callisto. The first observation occurs ~ 5 hrs 45 min before closest approach and the final observation ends at ~ 24 minutes after Callisto closest approach. NIMS will determine global distribution of the compositional units from data taken in the first Callisto observation (GLOBAL), the global context map. The Asgard region, a multi-ring structure will be observed ~ 90 minutes before C/A. At this higher spatial resolution, NIMS will begin an intensive study of regional surface composition and search for minor surface components by observing small surface features in the highest spectral resolution possible (ARINGS, CRATER and CSPOTS). NIMS will also return a 408 wavelength real time observation of Callisto (CALLRT).

Rings Science

The C3 orbit contains one observation of the Main Ring (MRING). NIMS will study the composition and particle sizes of the main ring band at a scattering angle at phase angle of approximately 179 degrees, i.e. forward scattering.

NIMS C3 Science Overview

Jupiter Science

The Jupiter feature campaign for the C3 orbit concentrates on South Equitorial Belt (Note: this is a change from the orginal OPG plan. It was found in spring/summer 1996 that no White Ovals were available for viewing during the planned observation times. It was decided by the AWG to swap the E6 South Equitorial Belt target for the C3 White Oval. Thus a White Oval will now be targetted in E6). This feature will be tracked over four separate Jupiter rotations: 11, 55, 136 and 153 degrees (FEAxxx). These feature tracks are sequenced as a collaborative effort by all remote sensing instruments. Several special collaborative observations of the Jovian auroral zone are planned for NIMS, UVS and most particles and fields instruments wherein the magnetosphere footprint on the planet is connected to the S/C is observed simultaneously with the in-situ observations of the magnetic field itself. For NIMS, three real-time, full spectral observations of four mirror positions are acquired (NTARRT), centered at 59 degrees north, 162 degrees west. In addition, NIMS will acquire one other auoral measurement for each pole (AURORA) and a north polar haze observation (NPOLE) one rotation after the collaborative magneto-sphere footprint solar occultation, NIMS will acquire a night-time map of the Jovian hotspot region near 10 degrees north latitude (OCSPEC).

Calibration

There are two NIMS RCT calibration observations in C3 and an Opcal observation. There is no NIMS PCT calibration in C3. The first RCT calibration occurs just after the start of the C3B load a few days after the OTM burn and will be returned via realtime. The second RCT calibration takes place just after the start of the C3C load after apojove and the OTM and will also be returned via realtime. The OPCAL will be performed near the end of the C3C load in-bound on the E4 orbit and will be returned via realtime. There are no explicit Dark Sky observations in C3. The instrument’s dark levels will be extracted from off-limb data.

Early Data Return

There are 11 realtime NIMS observations in C3: 2 instrument health checks of 3 wavelengths (HEALTH), 1 408 wavelength Callisto observation (CALLRT), 3 408 wavelength Jupiter observations (NTARRT), 1 8 wavelength Fixed Map Io observation (RTIMON), 1 408 wavelength Europa observation (EURORT), 2 RCT cals and 1 OPCAL. The times for when these realtime observations will be returned can be found on page 1-02 of the NIMS Guide.

C3 Playback

C3 playback will start 11/11/96 (D316) in the middle of Track 2 where the C3 encouter record started. C3 playback has been split into two passes. C3 playback is scheduled to end on 12/15/96 (D350).

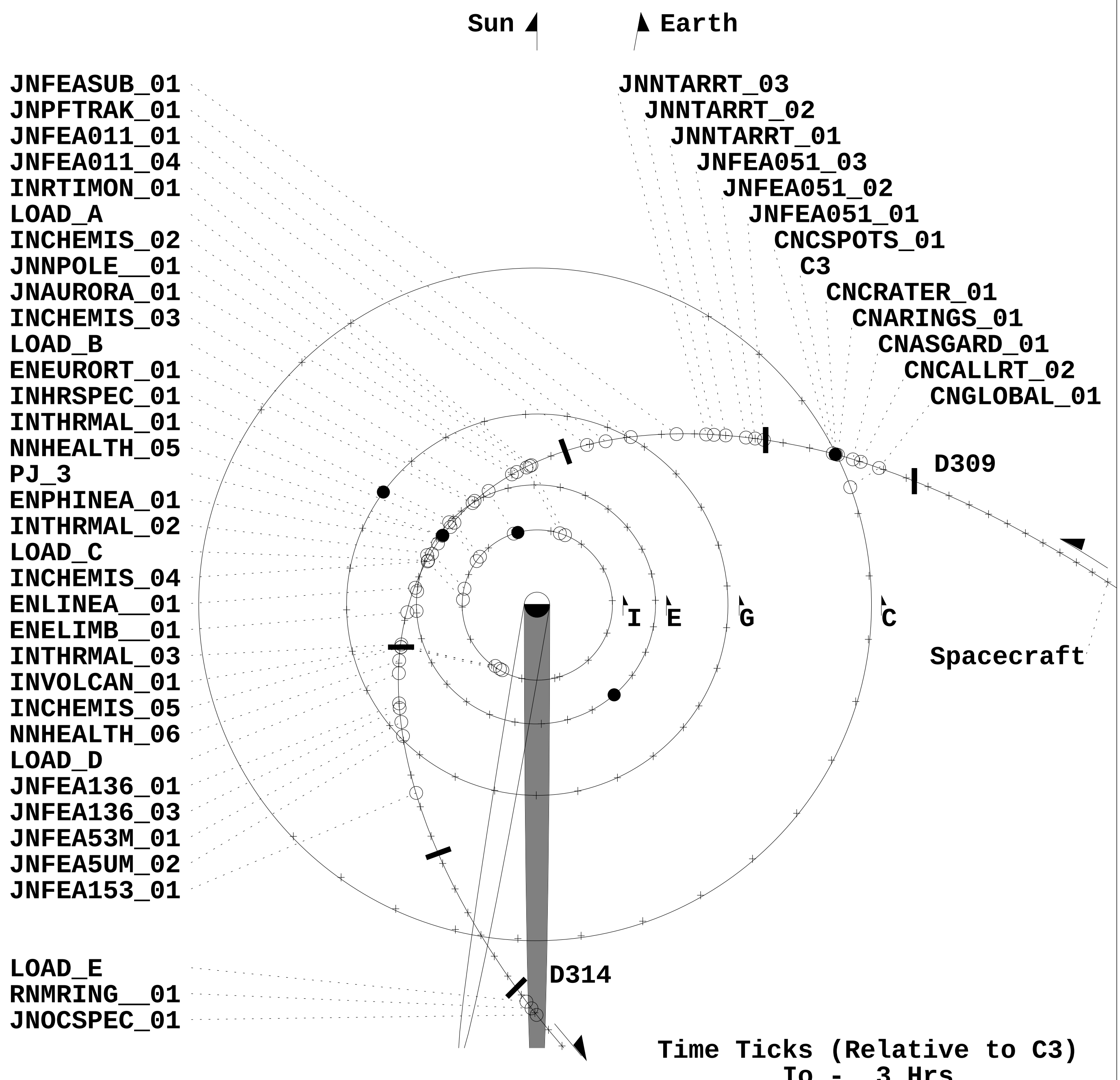
<u>C3 Time-Ordered Listing</u>

OAPEL	Start (UTC)	End (UTC)	Duration
C3NNCHOPON01-	96-307/21:57:01	96-307/22:03:05	000/00:06:04
C3CNGLOBAL01-	96-309/06:01:09	96-309/06:43:37	000/00:42:28
C3CNCALLRT02-	96-309/09:20:21	96-309/09:24:23	000/00:04:02
C3CNASGARD01-	96-309/11:59:05	96-309/12:28:55	000/00:29:50
C3CNARINGS01-	96-309/12:47:37	96-309/13:10:53	000/00:23:15
C3CNCRATER01-	96-309/13:16:57	96-309/13:23:31	000/00:06:34
C3CNCSPOTS01-	96-309/13:47:16	96-309/13:54:21	000/00:07:04
C3JNFEA05101-	96-310/00:13:09	96-310/00:19:09	000/00:06:00
C3JNFEA05102-	96-310/01:23:56	96-310/01:29:56	000/00:06:00
C3JNFEA05103-	96-310/02:43:49	96-310/02:49:49	000/00:06:00
C3JNNTARRT01+	96-310/05:26:37	96-310/05:36:44	000/00:10:06
C3JNNTARRT02+	96-310/07:05:42	96-310/07:15:49	000/00:10:06
C3JNNTARRT03+	96-310/07:58:17	96-310/08:08:24	000/00:10:06
C3JNFEASUB01-	96-310/11:38:41	96-310/11:44:20	000/00:05:38
C3JNPFTRAK01-	96-310/16:49:06	96-310/16:59:32	000/00:10:26
C3JNFEA01101-	96-310/19:40:59	96-310/20:04:15	000/00:23:15
C3JNFEA01104-	96-310/21:41:19	96-310/21:51:59	000/00:10:40
C3INRTIMON01-	96-311/03:28:07	96-311/03:34:11	000/00:06:04
C3NIMSP2LD01-	96-311/03:35:12	96-311/03:50:22	000/00:15:10
C3INCHEMIS02-	96-311/04:00:29	96-311/04:09:29	000/00:09:00
C3JNNPOLE 01-	96-311/04:46:59	96-311/05:02:09	000/00:15:10
C3JNAURORA01-	96-311/05:10:15	96-311/06:05:51	000/00:55:36
C3INCHEMIS03-	96-311/08:01:07	96-311/08:18:35	000/00:17:28
C3NIMSP2LD02-	96-311/09:39:12	96-311/09:54:22	000/00:15:10
C3ENEURORT01-	96-311/09:42:14	96-311/09:48:18	000/00:06:04
C3INHRSPEC01-	96-311/11:48:37	96-311/12:09:20	000/00:20:43
C3INTHRMAL01-	96-311/12:24:00	96-311/12:32:49	000/00:08:48
C3NNHEALTH05-	96-311/13:24:40	96-311/13:27:42	000/00:03:02
C3ENPHINEA01-	96-311/14:24:17	96-311/14:32:13	000/00:07:56
C3INTHRMAL02-	96-311/15:12:52	96-311/15:31:04	000/00:18:12
C3NIMSP2LD03-	96-311/15:52:18	96-311/16:07:28	000/00:15:10
C3INCHEMIS04-	96-311/16:00:23	96-311/16:17:42	000/00:17:18

<u>C3 Time-Ordered Listing</u>

OAPEL	Start (UTC)	End (UTC)	Duration
C3ENELIMB 01-	96-311/20:50:33	96-311/21:04:33	000/00:14:00
C3INTHRMAL03-	96-311/23:45:30	96-311/23:51:34	000/00:06:04
C3INVOLCAN01-	96-311/23:57:38	96-312/00:07:44	000/00:10:06
C3INCHEMIS05-	96-312/00:03:42	96-312/00:11:47	000/00:08:05
C3NNHEALTH06-	96-312/01:18:31	96-312/01:21:33	000/00:03:02
C3NIMSP2LD04-	96-312/02:24:14	96-312/02:39:24	000/00:15:10
C3JNFEA13601-	96-312/05:23:13	96-312/05:39:23	000/00:16:10
C3JNFEA13603-	96-312/05:53:33	96-312/05:59:33	000/00:06:00
C3JNFEA53M01-	96-312/07:26:34	96-312/07:47:48	000/00:21:14
C3JNFEA5UM02-	96-312/09:01:37	96-312/09:11:37	000/00:10:00
C3NNBFRDMP01+	96-312/09:59:15	96-312/10:01:16	000/00:02:01
C3NNBFRDMP02+	96-312/15:28:52	96-312/15:30:53	000/00:02:01
C3JNFEA15301-	96-312/15:38:59	96-312/16:04:15	000/00:25:16
C3NNBFRDMP03+	96-312/20:39:17	96-312/20:41:18	000/00:02:01
C3NIMSP2LD05-	96-312/03:00:17	96-312/03:15:27	000/00:15:10
C3RNMRING 01-	96-314/04:21:10	96-314/04:38:22	000/00:17:11
C3JNOCSPEC01-	96-314/05:51:10	96-314/06:01:16	000/00:10:06
C3NNNMSAFE01-	96-314/06:02:17	96-314/06:06:20	000/00:04:02
C3NNRCTRLT01-	96-319/01:29:20	96-319/14:33:58	000/12/04/38
C3CNRCTRLT02-	96-334/13:48:49	96-335/02:53:27	000/13:04:38
C3NNNOPCAL01-	96-349/09:16:05	96-349/09:34:17	000/00:18:12

NIMS C3 OBSERVATIONS



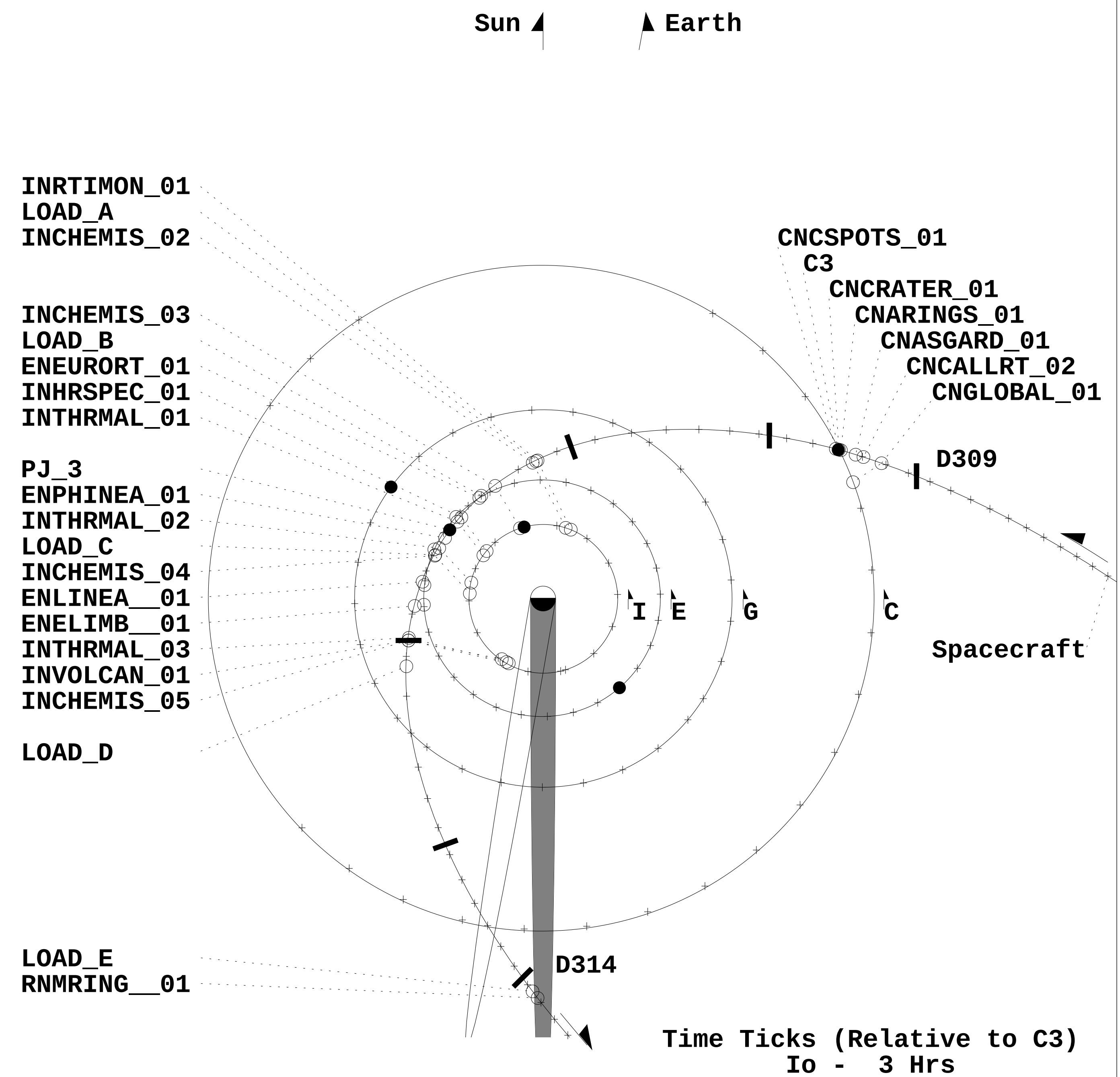
Time Ticks (Relative to C3)
Io - 3 Hrs
Europa - 3 Hrs
Ganymede - 6 Hrs
Callisto - 12 Hrs
Spacecraft - 4 Hrs

Callisto Flyby (C3): 04-NOV-1996 (D309) 13:35:29 UTC
Perijove (PJ3): 06-NOV-1996 (D311) 13:32:16 UTC

C3 North Trajectory Pole View

NIMS - FEL - 11/08/96

NIMS C3 SATELLITE OBSERVATIONS

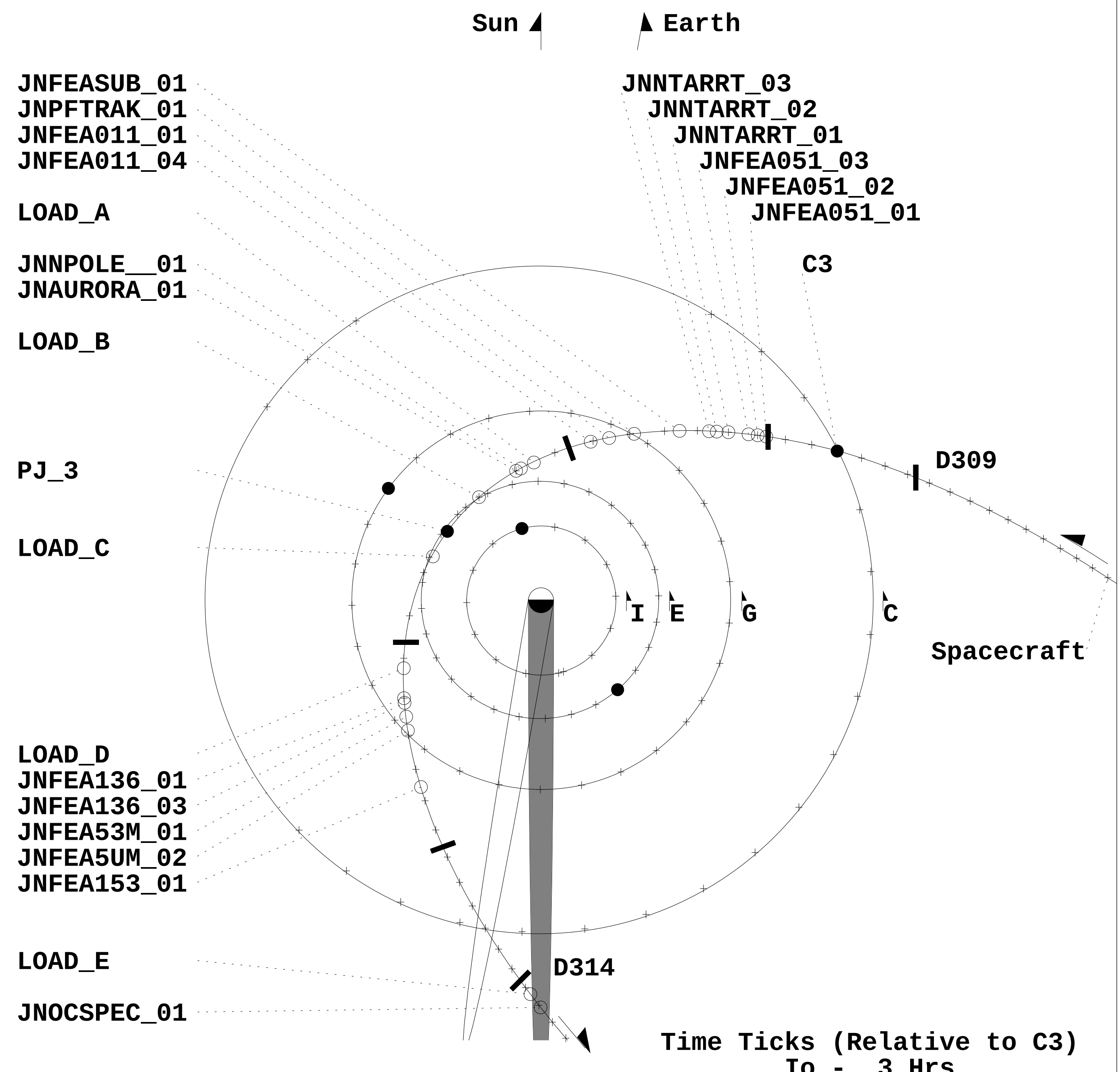


Time Ticks (Relative to C3)
Io - 3 Hrs
Europa - 3 Hrs
Ganymede - 6 Hrs
Callisto - 12 Hrs
Spacecraft - 4 Hrs

Callisto Flyby (C3): 04-NOV-1996 (D309) 13:35:29 UTC
Perijove (PJ3): 06-NOV-1996 (D311) 13:32:16 UTC

C3 North Trajectory Pole View

NIMS C3 JUPITER OBSERVATIONS



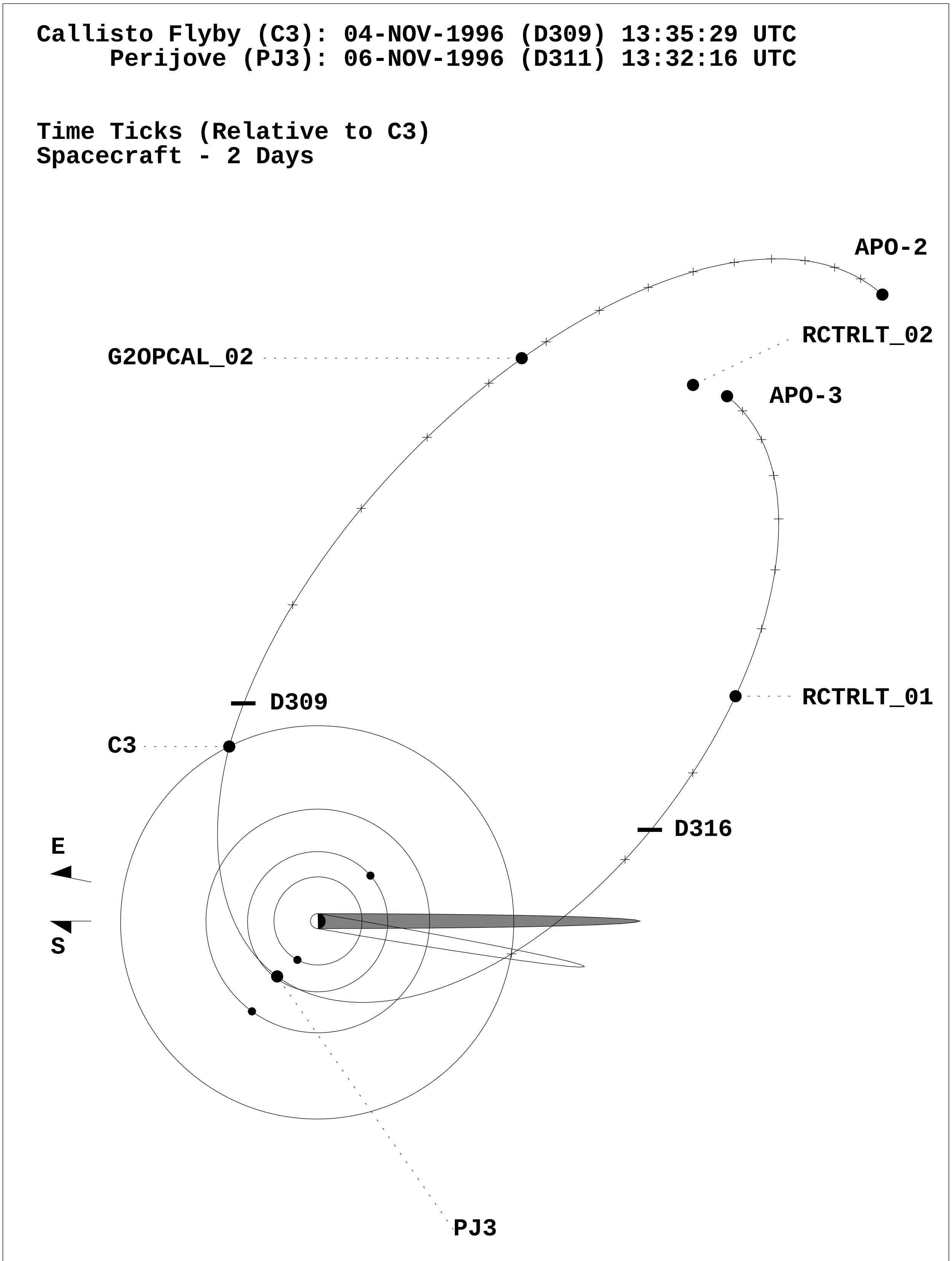
Time Ticks (Relative to C3)
Io - 3 Hrs
Europa - 3 Hrs
Ganymede - 6 Hrs
Callisto - 12 Hrs
Spacecraft - 4 Hrs

Callisto Flyby (C3): 04-NOV-1996 (D309) 13:35:29 UTC
Perijove (PJ3): 06-NOV-1996 (D311) 13:32:16 UTC

C3 North Trajectory Pole View

NIMS - FEL - 11/08/96

NIMS C3 CALIBRATIONS



C3 North Trajectory Pole View, Apoapsis to Apoapsis

NIMS C3 Input Parameters

Activity ID	Observation Title	Start time of Activity	Mode	Gain	Record Format	NIMS Edit Table	NIMS Playback Table	Extra Detectors Recorded	Grating Start Position	Grating Offset
C3CNGLOBAL01-	CALLISTO GLOBAL MOSAIC	96-309/06:01:09.666	LM	4	LPU	CLM245	CLM204	11,12		4
C3CNASGARD01-	ASGARD BASIN COVERAGE	96-309/11:59:06.733	FM	4	LPU	CFM126	CFM102			4
C3CNARINGS01-	Callisto multi-ring structure coverage	96-309/12:47:38.733	LM	4	LPU	CLM245	CLM204			4
C3CNCRATER01-	BURR - CENTRAL PIT CRATER	96-309/13:16:57.733	SM	4	MPW	CSM119	CSM102			4
C3CNCSPOTS01-	CALLISTO BRIGHT SPOTS	96-309/13:47:17.733	SM	4	MPW	CFM221	CFM102			4
C3JNFEA05101-	Jupiter campaign feature 51 deg part 1	96-310/02:14:31.012	SM	2	LPU	JFT68C	JFT25A		1	4
C3JNFEA05102-	Jupiter Campaign Feature 53 dgrs. part 2	96-310/03:25:17.012	SM	2	LPU	JFT68C	JFT25A		1	4
C3JNFEA05103-	Jupiter Campaign Feature 53 dgrs. part 3	96-310/04:45:10.012	SM	2	LPU	JFT68C	JFT25A		1	4
C3JNFEASUB01-	Jupiter Campaign Feature Sub-Spectra	96-310/13:40:02.678	LM	4	LPU	JSB253A	JSB80A		0	4
C3JNPFTRAK01-	Jupiter Partial Feature Track part 1	96-310/16:49:07.357	SM	2	LPU	JFT68D	JFT26A		1	4
C3JNFEA01101-	Jupiter Campaign Feature 18 dgrs. part 1	96-310/21:42:20.678	SM	2	LPU	JFT68C	JFT25A		1	4
C3JNFEA01104-	Jupiter Campaign Feature 18 dgrs. part 4	96-310/23:42:40.012	SM	2	LPU	JFT68C	JFT25A		1	4
C3INCHEMIS02-	MONITORING OF IO'S DAYSIDE	96-311/04:00:30.292	LM	2	LPU	ILM245	ILM102	9, 10	0	4
C3JNNPOLE 01-	Jupiter North Pole Map #1	96-311/04:46:59.667	SM	2	LPU	JFT68D	JFT26A		1	4
C3JNAURORA01-	Jupiter Aurora	96-311/05:10:15.000	LM	2	LPU	JAU253A	JAU65A		0	4
C3INCHEMIS03-	MONITORING OF IO'S DAYSIDE	96-311/08:01:08.292	LM	2	LPU	ILM245	ILM102	9, 10	0	4
C3INHRSPEC01-	High spatial & spectral obs. of Io	96-311/11:48:38.292	LM	2	MPW	ILM442	ILM408		0	4
C3INTHRMAL01-	MONITORING OF IO'S NIGHTSIDE	96-311/12:24:02.292	LM	2	MPW	ILM442	ILMDK102		0	4
C3ENPHINEA01-	EUROPA GLOBAL MOSAIC ONE	96-311/14:12:12.333	SM	3	LPU	ESM68	ESM51		0	4
C3INTHRMAL02-	MONITORING OF IO'S NIGHTSIDE	96-311/15:12:53.292	LM	2	MPW	ILM442	ILMDK10		0	4
C3INCHEMIS04-	MONITORING OF IO'S DAYSIDE	96-311/16:00:24.292	LM	2	MPW	ILM442	ILM102		0	4
C3ENLINEA 01-	EUROPA LINEA REGION	96-311/18:21:57.000	LM	2	LPU	ELM245	ELM204	6, 7	0	4
C3ENELIMB 01-	EUROPA OCCULTATION	96-311/20:41:24.333	FM	2	LPU	EFM126	EFM102		0	4
C3INTHRMAL03-	MONITORING OF IO'S NIGHTSIDE	96-311/23:34:22.999	XM	4	LPU	ILMDK245	ILMDK102	1, 2	21	4
C3INVOLCAN01-	Monitoring of selected volcanic regions	96-311/23:45:30.333	XM	2	LPU	ILMDK245	ILMDK102	1, 3	21	4
C3INCHEMIS05-	MONITORING OF IO'S DAYSIDE	96-311/22:25:38.292	LM	2	LPU	ILM245	ILM102	9, 10	0	4
C3JNFEA13601-	Jupiter Campaign Feature 129 phase prt 1		SM	2	LPU	JFT68C	JFT25A			
C3JNFEA13603-	Jupiter Campaign Feature 129 phase prt 3	96-312/07:54:54.012	SM	2	LPU	JFT68C	JFT25A		1	4
C3JNFEA53M01-	Jupiter Campaign Ftr. 5 and 3 micron map	96-312/09:27:55.012	LM	4	LPU	J35160	J35160		0	4
C3JNFEA5UM02-	Jupiter Campaign Feature 5um Map	96-312/11:02:58.012	LM	4	LPU	J5M253B	J5M80B		0	4
C3NNBFRDMP01+	BUFFER DUMP TO TAPE	96-312/12:00:36.012								4
C3NNBFRDMP02+	BUFFER DUMP TO TAPE	96-312/17:30:13.012								4
C3JNFEA15301-	Jupiter Campaign Feature 150 phase prt 1	96-312/17:40:20.012	LM	2	LPU	JFT68C	JFT25A		1	4
C3NNBFRDMP03+	BUFFER DUMP TO TAPE	96-312/22:40:38.012								4
C3RNMRING 01-	MAIN RING OBSERVATION	96-314/04:21:11.807	FM	4	LPU	C3RFM126	C3RFM102			4
C3JNOCSPEC01-	Jupiter Occultation Spectrum	96-314/05:51:10.807	LM		LPU	J35160	J35160			4

NIMS C3 Resource Usage

ACTID	NIMS	Record	Tics	Number	Observation	Observation	Total Tape	Selected	Mode
	mode	mode		λ	record	Playback	Mbits	MBits	cycle time
				returned	time (sec)	time	(BOT)	(SBOT)	(sec)
C3CNGLOBAL01-	LM	LPU	528.17	204	2249	2249	13.87	13.87	8.667
C3CNASGARD01-	FM	LPU	414.48	102	1764	1246	10.88	7.69	4.333
C3CNARINGS01-	LM	LPU	157.34	204	667	663	4.11	4.09	8.667
C3CNCRATER01-	SM	MPW	194.60	102	218	207	2.52	2.40	2.330
C3CNCSPOTS01-	FM	MPW	324.68	102	366	365	4.23	4.22	4.333
C3JNFEA05101-	SM	LPU	26.08	25	107	105	0.66	0.65	2.330
C3JNFEA05102-	SM	LPU	26.08	25	107	105	0.66	0.65	2.330
C3JNFEA05103-	SM	LPU	26.08	25	107	105	0.66	0.65	2.330
C3JNFEASUB01-	LM	LPU	82.81	80	349	339	2.15	2.09	8.667
C3JNPFTRAK01-	SM	LPU	99.21	26	419	409	2.58	2.52	2.330
C3JNFEA01101-	SM	LPU	207.04	25	879	399	5.42	2.46	2.330
C3JNFEA01104-	SM	LPU	97.57	25	412	401	2.54	2.47	2.330
C3INCHEMIS02-	LM	LPU	59.60	102	250		1.54	0.00	8.667
C3JNNPOLE 01-	SM	LPU	245.95	26	1045	1035	6.45	6.38	2.330
C3JNAURORA01-	LM	LPU	707.95	65	3016	2823	18.60	17.41	8.667
C3INCHEMIS03-	LM	LPU	176.80	102	750		4.63	0.00	8.667
C3INHRSPEC01-	LM	MPW	836.20	408	948	947	10.96	10.95	8.667
C3INTHRMAL01-	LM	MPW	356.32	102	402		4.65	0.00	8.667
C3ENPHINEA01-	SM	LPU	113.51	51	480	474	2.96	2.92	2.330
C3INTHRMAL02-	LM	MPW	452.12	10	511		5.91	0.00	8.667
C3INCHEMIS04-	LM	MPW	482.00	102	545		6.30	0.00	8.667
C3ENLINEA01-	LM	LPU	760.92	204	3242	822	20.00	5.07	8.667
C3ENELIMB01-	FM	LPU	222.98	102	947	564	5.84	3.48	4.333
C3INTHRMAL03-	LM	LPU	13.89	102	55		0.34	0.00	8.667
C3INVOLCAN01-	LM	LPU	13.89	102	55		0.34	0.00	8.667
C3INCHEMIS05-	LM	LPU	72.49	102	305		1.88	0.00	8.667
C3JNFEA13601	SM	LPU	42.50	25	192	172	1.18	1.06	2.330
C3JNFEA13603-	SM	LPU	28.42	25	117	107	0.72	0.66	2.330
C3JNFEA53M01-	LM	LPU	174.46	160	740	720	4.56	4.44	8.667
C3JNFEA5UM02	LM	LPU	89.37	80	377	357	2.33	2.20	8.667
C3NNBFRDMP01+		LPU	22.10		90			0.00	
C3NNBFRDMP02+		LPU	22.10		90			0.00	
C3JNFEA15301-	SM	LPU	96.64	25	408	376	2.52	2.32	2.33
C3NNBFRDMP03+		LPU	22.10		90	90		0.56	
C3RNMRING01-	FM	LPU	152.42	102	646	642	3.98	3.96	4.333
C3JNOCSPEC01-	LM	LPU	87.96	160	371	300	2.29	1.85	8.667
Total			**7436.82**				**158.26**		

NIMS C3 Resource Usage

ACTID	AACS Mbits compress 2.5	Threshold	Compressn	Total MBTG (w/ 4% overhead)	Data Reduction Factor (SBOT/BTG)
C3CNGLOBAL01-	0.13	2	2.10	5.24	2.6
C3CNASGARD01-	0.10	2	2.10	2.91	2.6
C3CNARINGS01-	0.04	2	2.10	1.55	2.6
C3CNCRATER01-	0.01	2	2.10	0.90	2.7
C3CNCSPOTS01-	0.02	2	2.10	0.85	5.0
C3JNFEA05101-	0.01	0	2.00	0.12	5.5
C3JNFEA05102-	0.01	0	2.00	0.12	5.5
C3JNFEA05103-	0.01	0	2.00	0.12	5.5
C3JNFEASUB01-	0.02	0	2.00	0.33	6.4
C3JNPFTRAK01-	0.02	0	2.00	0.47	5.3
C3JNFEA01101-	0.05	0	2.00	0.45	5.5
C3JNFEA01104-	0.02	0	2.00	0.45	5.5
C3INCHEMIS02-	0.01	2	1.25		
C3JNNPOLE 01-	0.06	0	2.00	1.20	5.3
C3JNAURORA01-	0.17	0	2.00	2.20	7.9
C3INCHEMIS03-	0.04	2	1.25		
C3INHRSPEC01-	0.05	2	1.25	7.42	1.5
C3INTHRMAL01-	0.02	0	2.00		
C3ENPHINEA01-	0.03	2	1.80	1.20	2.4
C3INTHRMAL02-	0.03	0	2.00		
C3INCHEMIS04-	0.03	2	1.25		
C3ENLINEA01-	0.19	2	2.00	2.01	2.5
C3ENELIMB01-	0.05	2	2.00	1.38	2.5
C3INTHRMAL03-	0.00	0	2.00		
C3INVOLCAN01-	0.00	0	2.00		
C3INCHEMIS05-	0.02	2	1.25		
C3JNFEA13601		0	2.00	0.19	5.5
C3JNFEA13603-	0.01	0	2.00	0.12	5.5
C3JNFEA53M01-	0.04	0	1.30	2.13	2.1
C3JNFEA5UM02	0.02	0	1.30	0.53	4.2
C3NNBFRDMP01+					
C3NNBFRDMP02+					
C3JNFEA15301-	0.02	0	2.00	0.42	5.5
C3NNBFRDMP03+					
C3RNMRING01-	0.04	0	2.50	1.26	3.1
C3JNOCSPEC01-	0.02	0	2.00	0.58	3.2
Total	**1.3164**			**34.12**	

NIMS C3 OBSERVING GEOMETRY

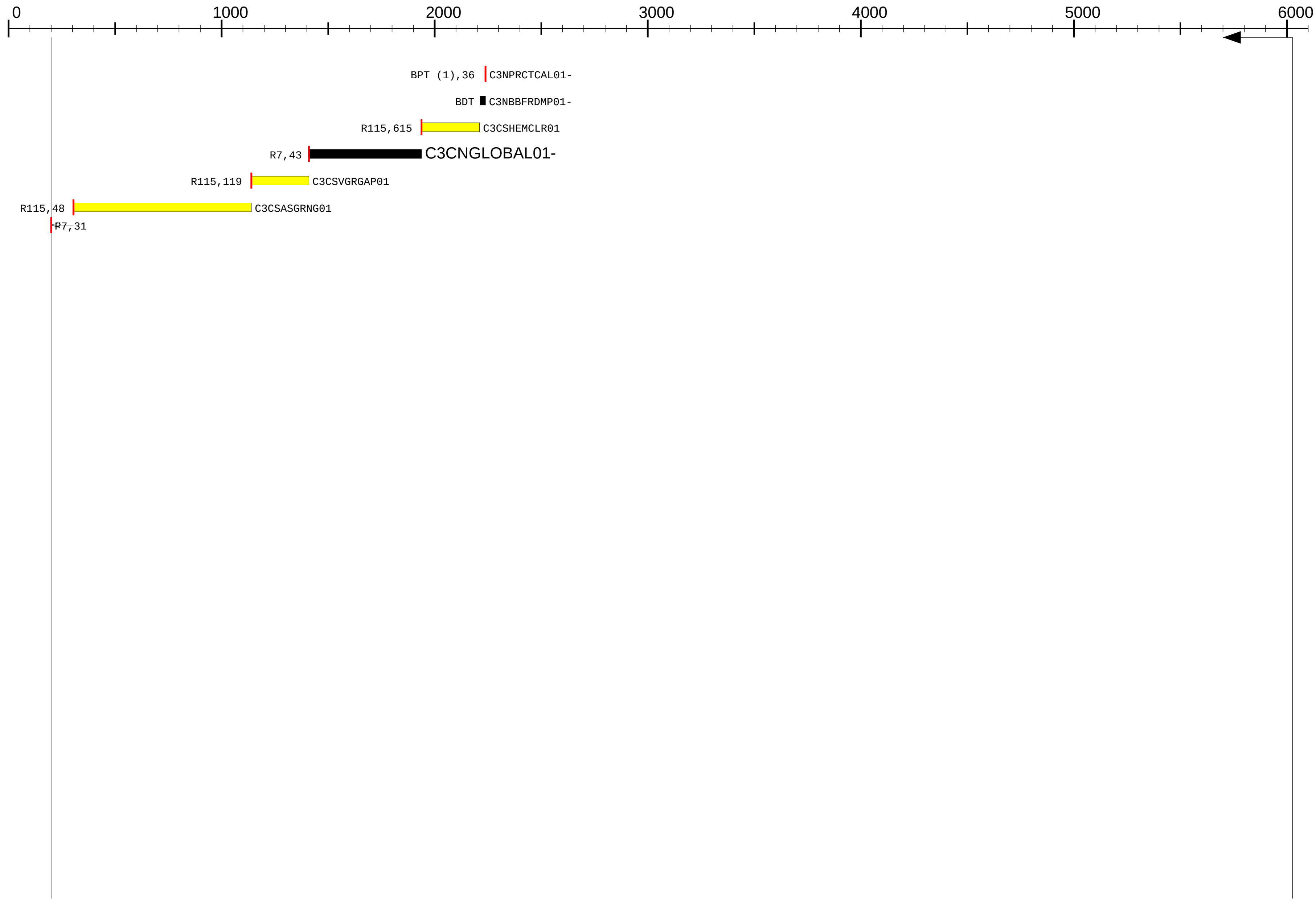
OAPEL	Latitude (deg)	Longitude (deg)	Range (km)	Cone (deg)	Light (deg)	View (deg)	Phase (deg)
C3CNGLOBAL01	-90 to +90	90 to 220	200K	138	0 to 125	0 to 90	52 to 54
C3CNCALLRT02	-2 to +2	165	115K	138	52	0	52
C3CNASGARD01	+10 to +34	120 to 155	39K	140	15 to 45	15 to 50	51
C3CNARINGS01	+23 to +28	150 to 160	16K	152	44 to 51	26 to 28	32 to 44
C3CNCRATER01	-20 to -18	109 to 110	4K	32 to 52	17 to 20	52 to 55	37 to 40
C3CNCSPOTS01	-42 to -38	38 to 46	9K	52 to 56	74 to 80	63 to 72	113 to 117
C3JNFEA05101	-12 to +2	265 to 275	1,500K	137	55 to 70	5 to 15	53
C3JNFEA05102	-12 to +2	265 to 275	1,490K	136	10 to 26	25 to 45	54
C3JNFEA05103	-12 to +2	270 to 300	1,470K	137	4 to 37	55 to 90	54
C3JNNTARRT01	60	160	1,420K	145	110	87	46
C3JNNTARRT02	60	155	1,340K	145	74	62	46
C3JNNTARRT03	60	160	1,320K	145	66	62	46
C3JNFEASUB01	-10 to 0	265 to 275	1,200K	150	0 to 15	30 to 50	41
C3JNPFTRAK01	+50 to +90	110 to 190	1,060K	162	74 to 104	70 to 90	29
C3JNFEA01101	-12 to +5	235 to 290	960K	171	20 to 90	0 to 70	11
C3JNFEA01104	-12 to +2	260 to 275	874K	172	0 to 20	10 to 40	11
C3INRTIMON01	-90 to -30	120 to 130	444K	143	26 to 36	0 to 10	12 to 26
C3INCHEMIS02	-90 to +90	45 to 225	420K	142	0 to 110	0 to 90	41
C3JNNPOLE_01	+50 to +90	130 to 230	740K	160	70 to 90	70 to 90	9
C3JNAURORA01	-90 to -60 +60 to +90	120 to 200	730K	159	65 to 85	70 to 90	11

NIMS C3 OBSERVING GEOMETRY

OAPEL	Latitude (deg)	Longitude (deg)	Range (km)	Cone (deg)	Light (deg)	View (deg)	Phase (deg)
C3INCHEMIS03	-90 to +90	75 to 250	286K	135	40 to 120	40 to 90	34
C3ENEURORT01	-5 to +5	280	186K	142	45	3	49
C3INHRSPEC01	-90 to +90	120 to 270	244K	132	26 to 122	27 to 90	37
C3INTHRMAL01	-90 to +90	100 to 190	244K	132	50 to 125	30 to 90	38
C3ENPHINEA01	-70 to +80	250 to 320	100K	154	0 to 90	0 to 60	37
C3INTHRMAL02	-90 to +90	125 to 245	272K	126	30 to 130	30 to 90	43
C3INCHEMIS04	-90 to +90	155 to 310	286K	124	40 to 100	20 to 90	46
C3ENLINEA_01	-25 to +20	215 to 255	35K	115 to 145	10 to 55	10 to 40	20 to 55
C3ENELIMB_01	-45 to +0	180 to 250	60K	81 to 83	30 to 90	10 to 80	87
C3INTHRMAL03	-90 to +90	165 to 245	570K	94	80 to 165	0 to 90	76
C3INVOLCAN01	-90 to +90	165 to 255	580K	93	80 to 160	0 to 90	76
C3INCHEMIS05	-90 to +90	235 to 345	590K	92	10 to 100	0 to 90	77
C3JNFEA13601	-9 to -1	265 to 285	900K	55 to 60	50 to 125	5 to 75	128
C3JNFEA13603	-9 to -1	265 to 285	900K	55	75 to 90	40 to 50	130
C3JNFEA53M01	-9 to -1	265 to 275	940K	55	135 to 155	0 to 30	130
C3JNFEA5UM02	-9 to -1	250 to 280	1,000K	54	135 to 170	60 to 90	131
C3JNFEA15301	-10 to +0	250 to 280	1,200K	36	60 to 140	0 to 90	148
C3RNMRING_01	----------	----------	2,260K	112	90	90	180
C3JNOCSPEC01	+0 to +20	105 to 125	2,280K	110	160 to 170	0 to 20	179

Phase 2A Tapemap of /home/dbliss/dave.bliss
Date: Thu Oct 17 10:43:37 1996 Page: 2

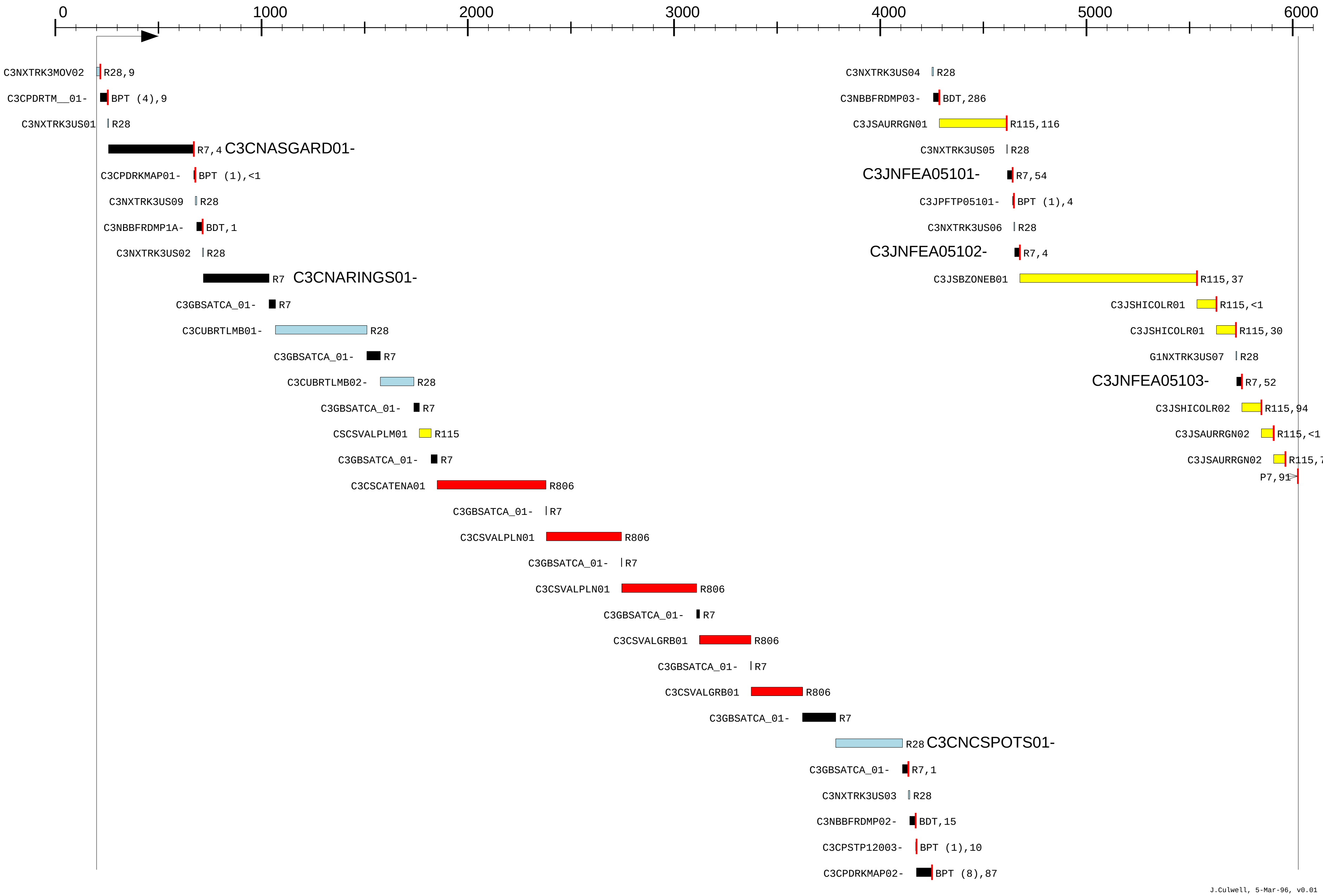
Track 2



J.Culwell, 5-Mar-96, v0.01

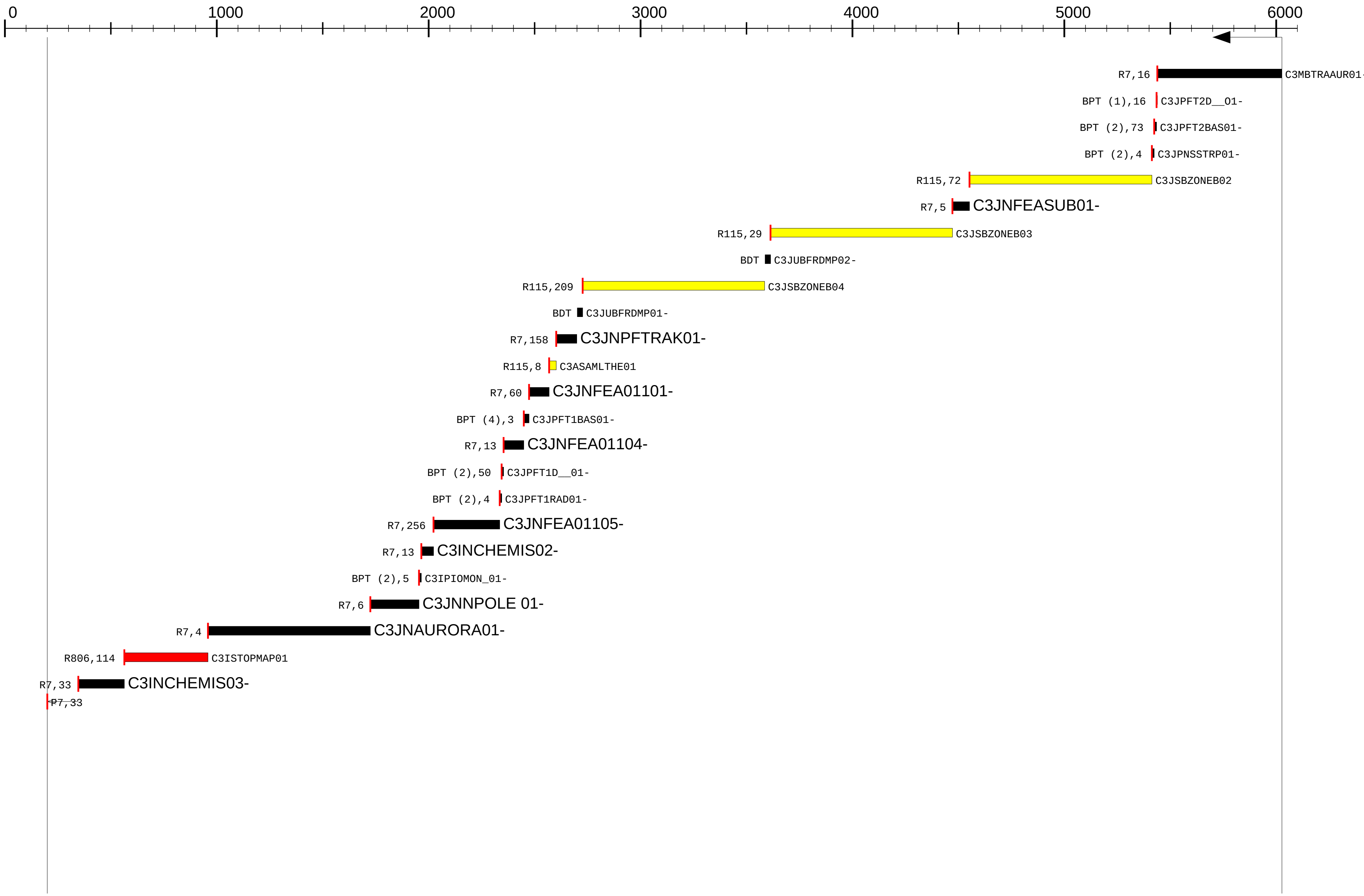
Phase 2A Tapemap of /home/dbliss/dave.bliss
Date: Thu Oct 17 10:43:37 1996 Page: 3

Track 3



Phase 2A Tapemap of /home/dbliss/dave.bliss
Date: Thu Oct 17 10:43:37 1996 Page: 4

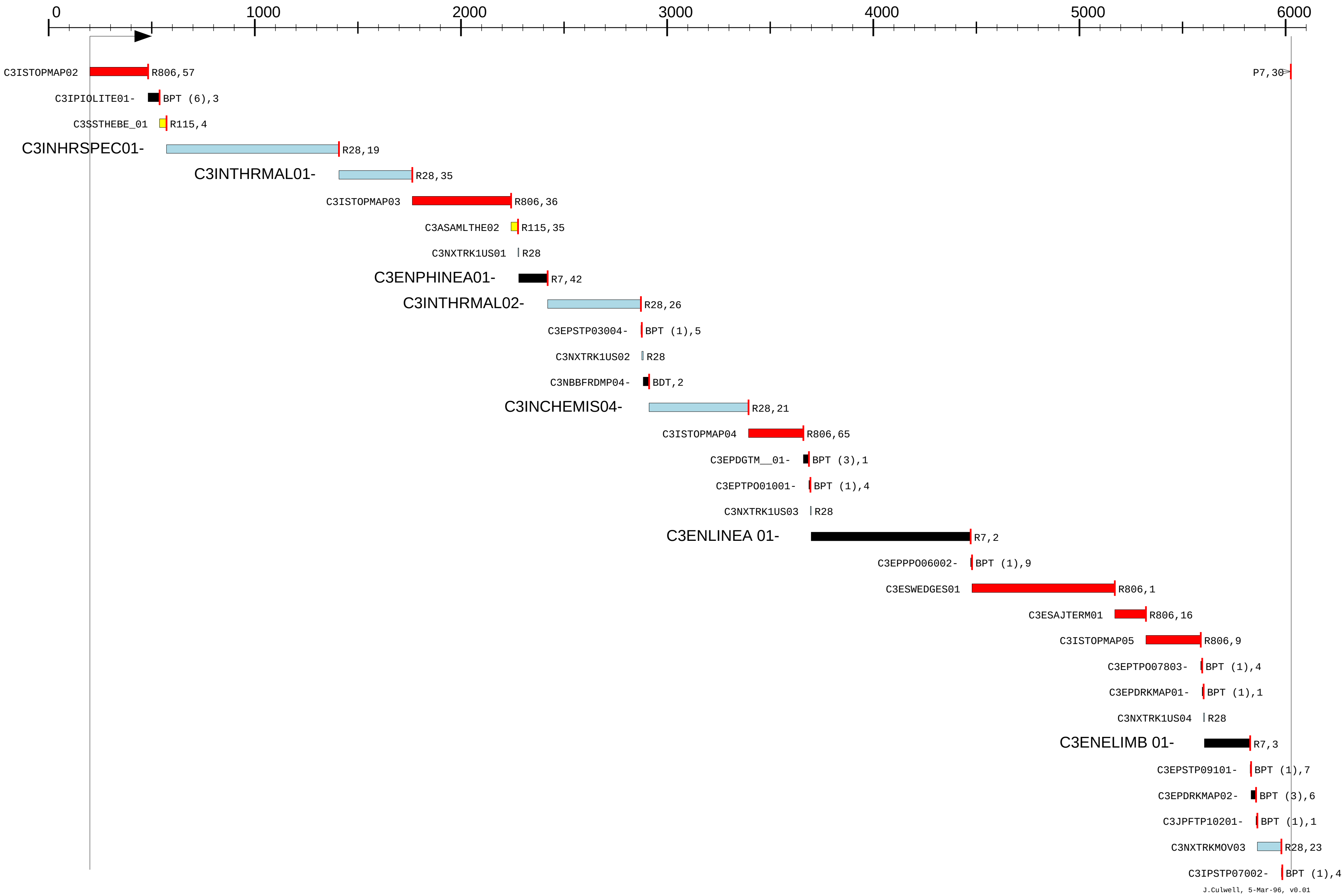
Track 4



J.Culwell, 5-Mar-96, v0.01

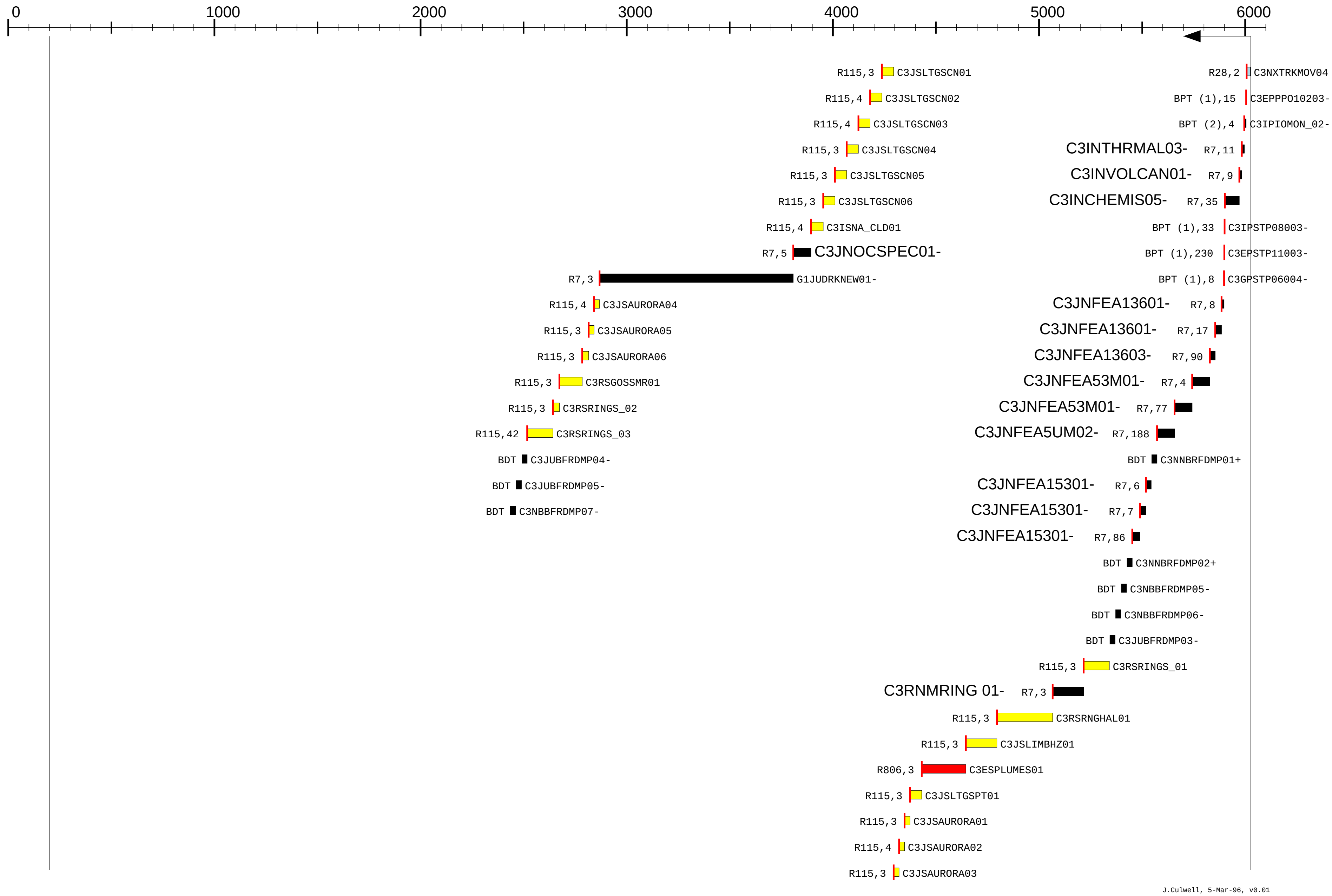
Phase 2A Tapemap of /home/dbliss/dave.bliss
Date: Thu Oct 17 10:43:37 1996 Page: 5

Track 1



Phase 2A Tapemap of /home/dbliss/dave.bliss
Date: Thu Oct 17 10:43:37 1996 Page: 6

Track 2



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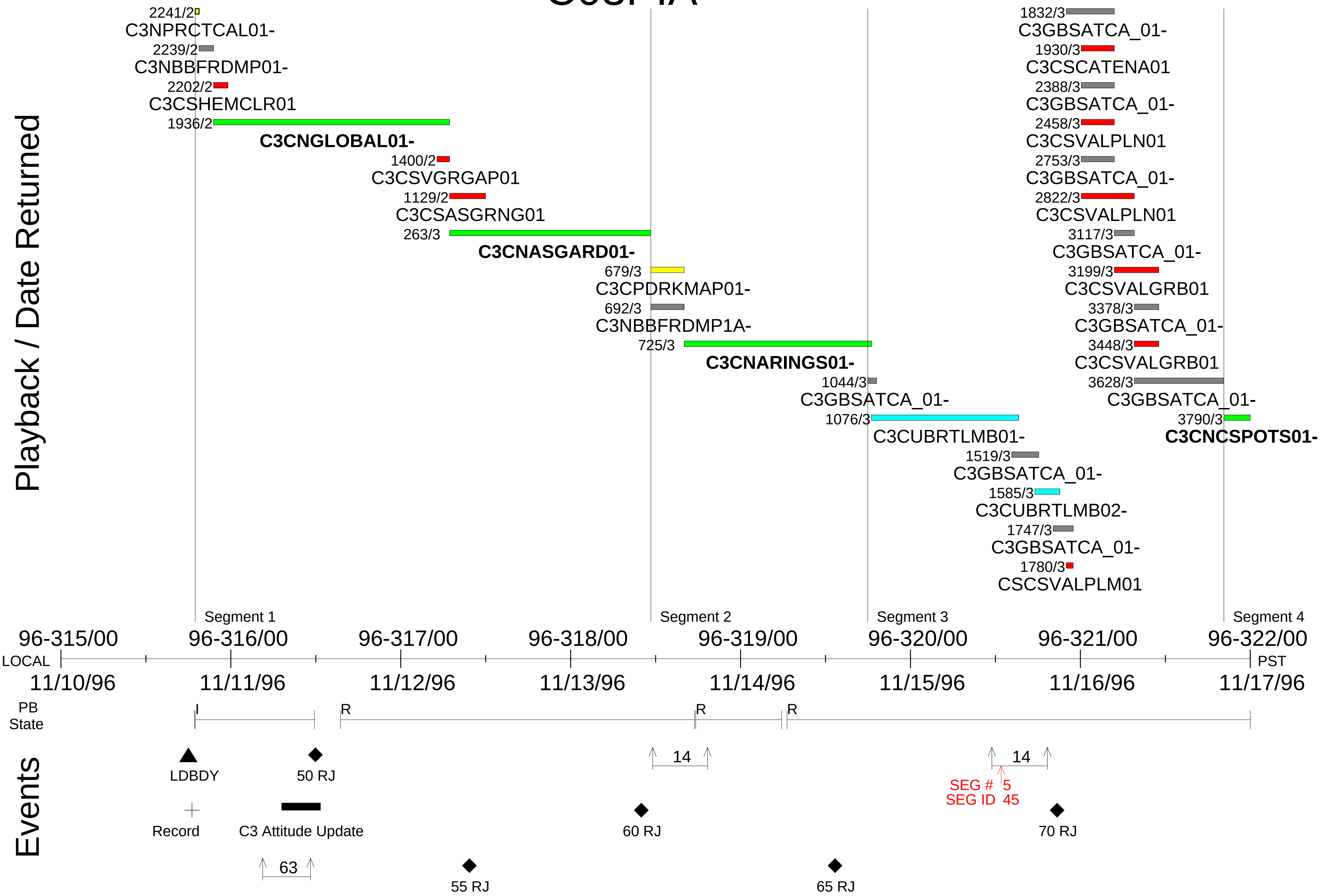

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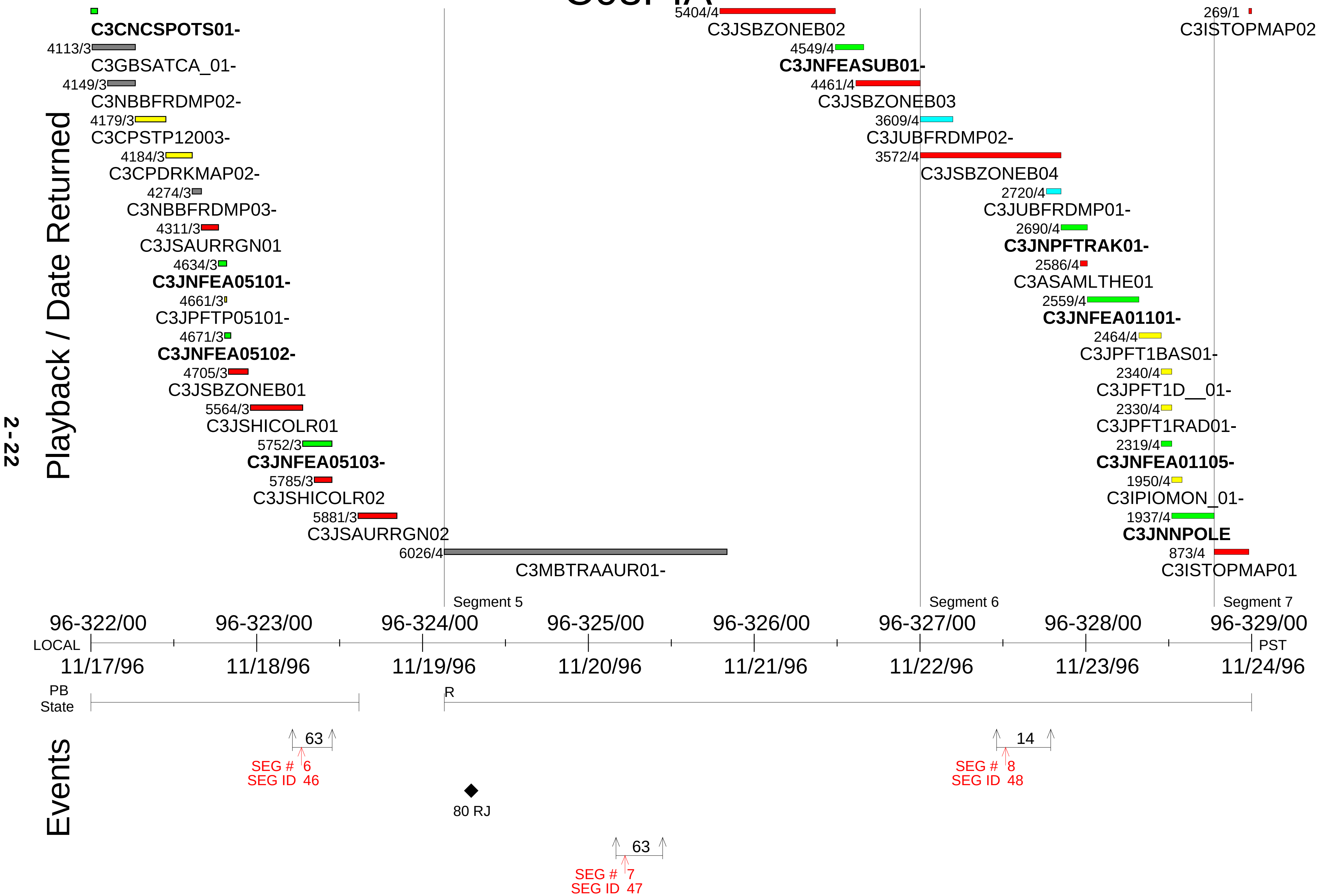
Thu Nov 7 14:19:00 1996, Page 1 of 5

C03PIA



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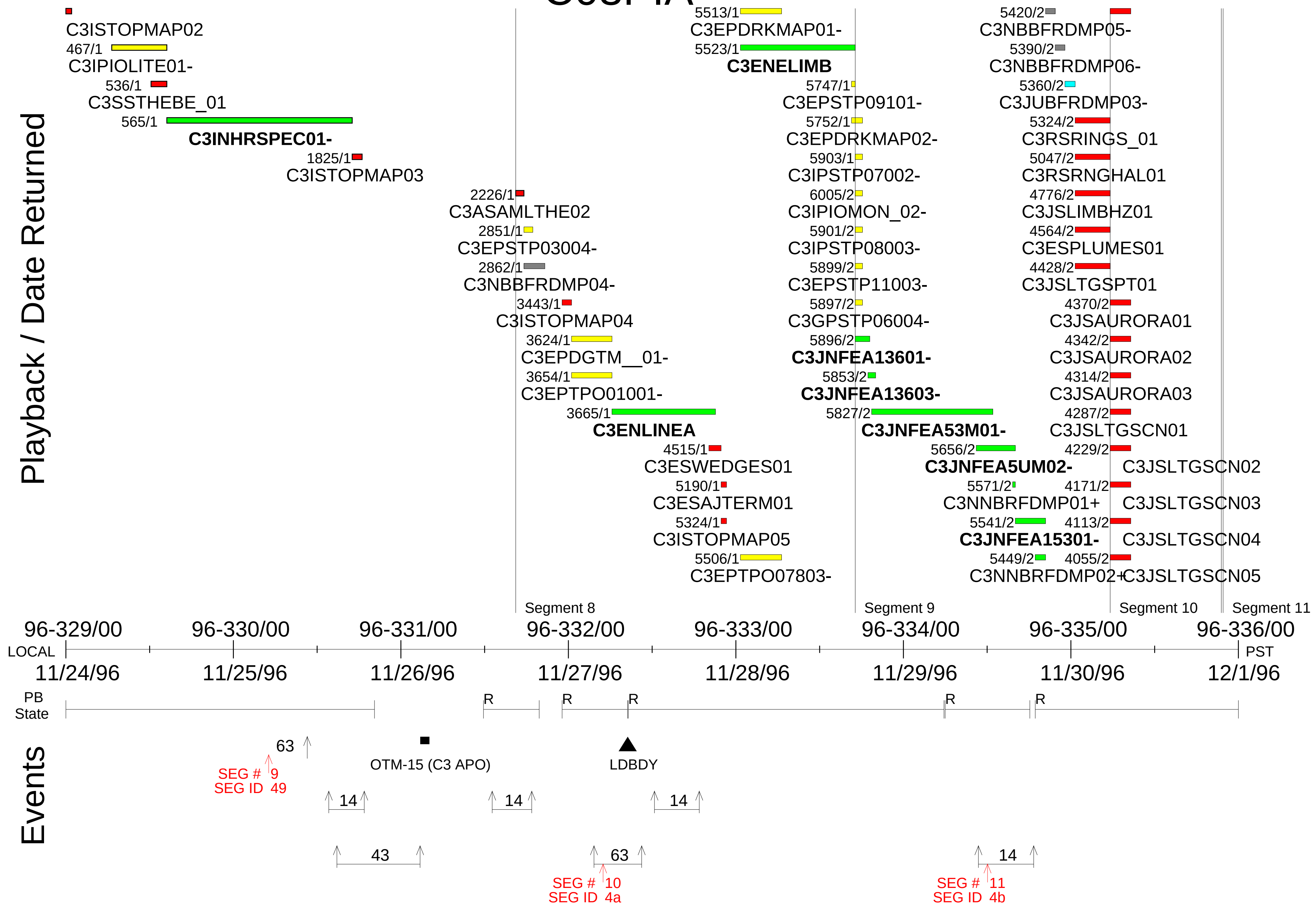
Thu Nov 7 14:19:00 1996, Page 2 of 5

C03PIA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565/1
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1825/1
C3ISTOPMAP03
2226/1
C3ASAMLTHE02
2851/1
C3EPSTP03004-
2862/1
C3NBBFRDMP04-
3443/1
C3ISTOPMAP04
3624/1
C3EPDGTM__01-
3654/1
C3EPTPO01001-
3665/1
C3ENLINEA
4515/1
C3ESWEDGES01
5190/1
C3ESAJTERM01
5324/1
C3ISTOPMAP05
5506/1
C3EPTPO07803-
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C3EPDRKMAP01-
5523/1
C3ENELIMB
5747/1
C3EPSTP09101-
5752/1
C3EPDRKMAP02-
5903/1
C3IPSTP07002-
6005/2
C3IPIOMON_02-
5901/2
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5656/2
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5571/2
C3NNBRFDMP01+
5541/2
C3JNFEA15301-
5449/2
C3NNBRFDMP02+
5420/2
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C3JUBFRDMP03-
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PB
State
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SEG ID 49
OTM-15 (C3 APO)
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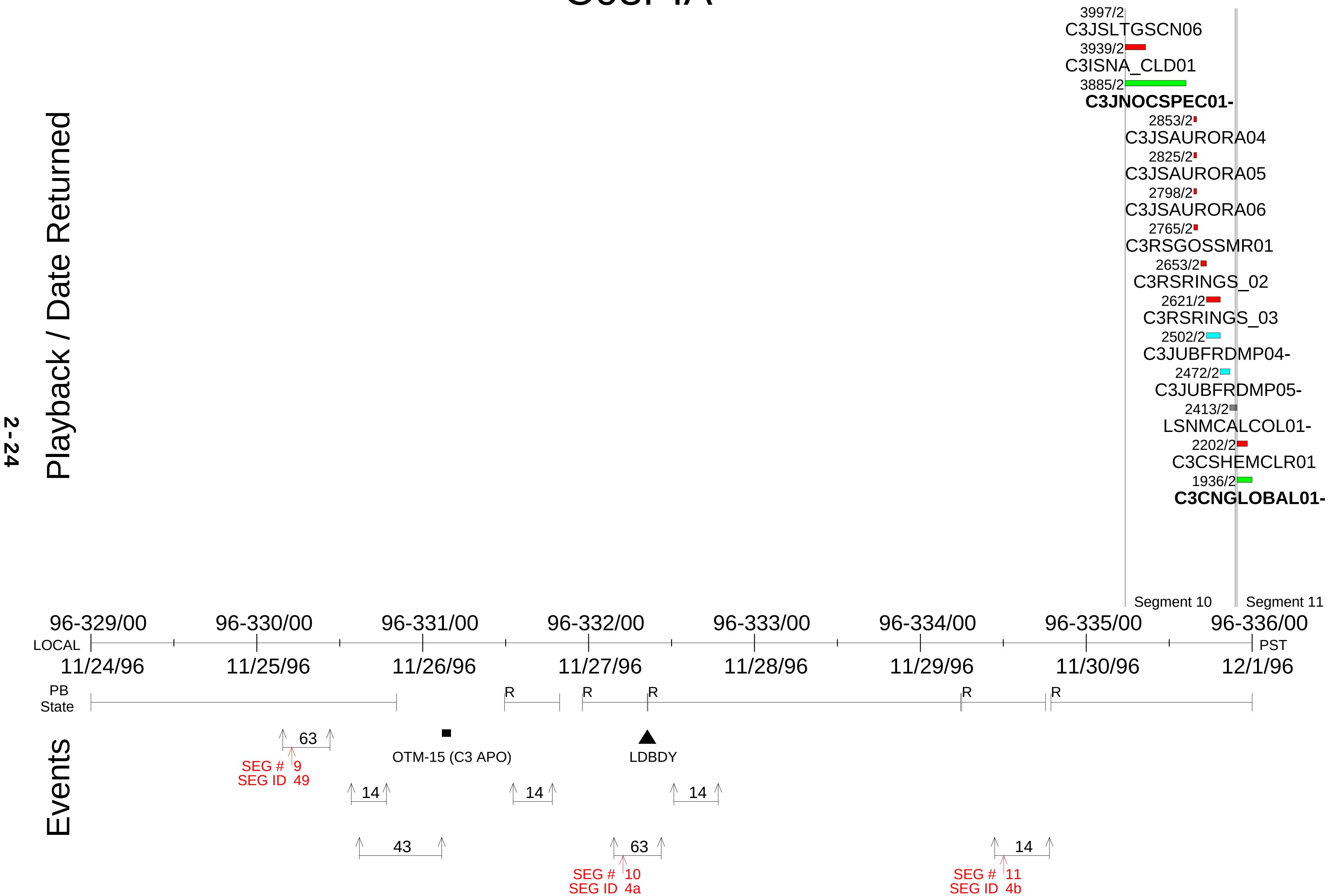

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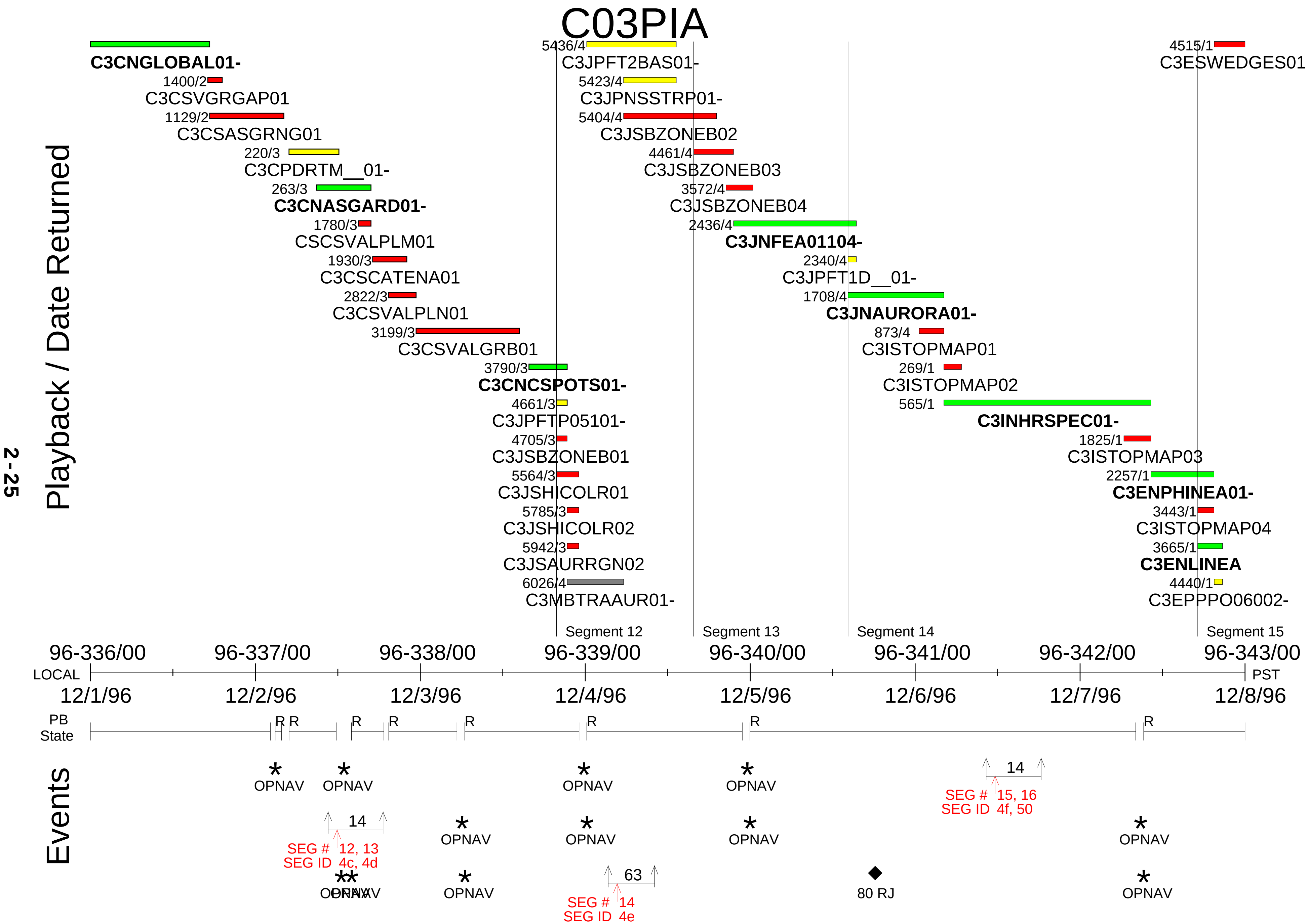
Thu Nov 7 14:19:00 1996, Page 3 of 5



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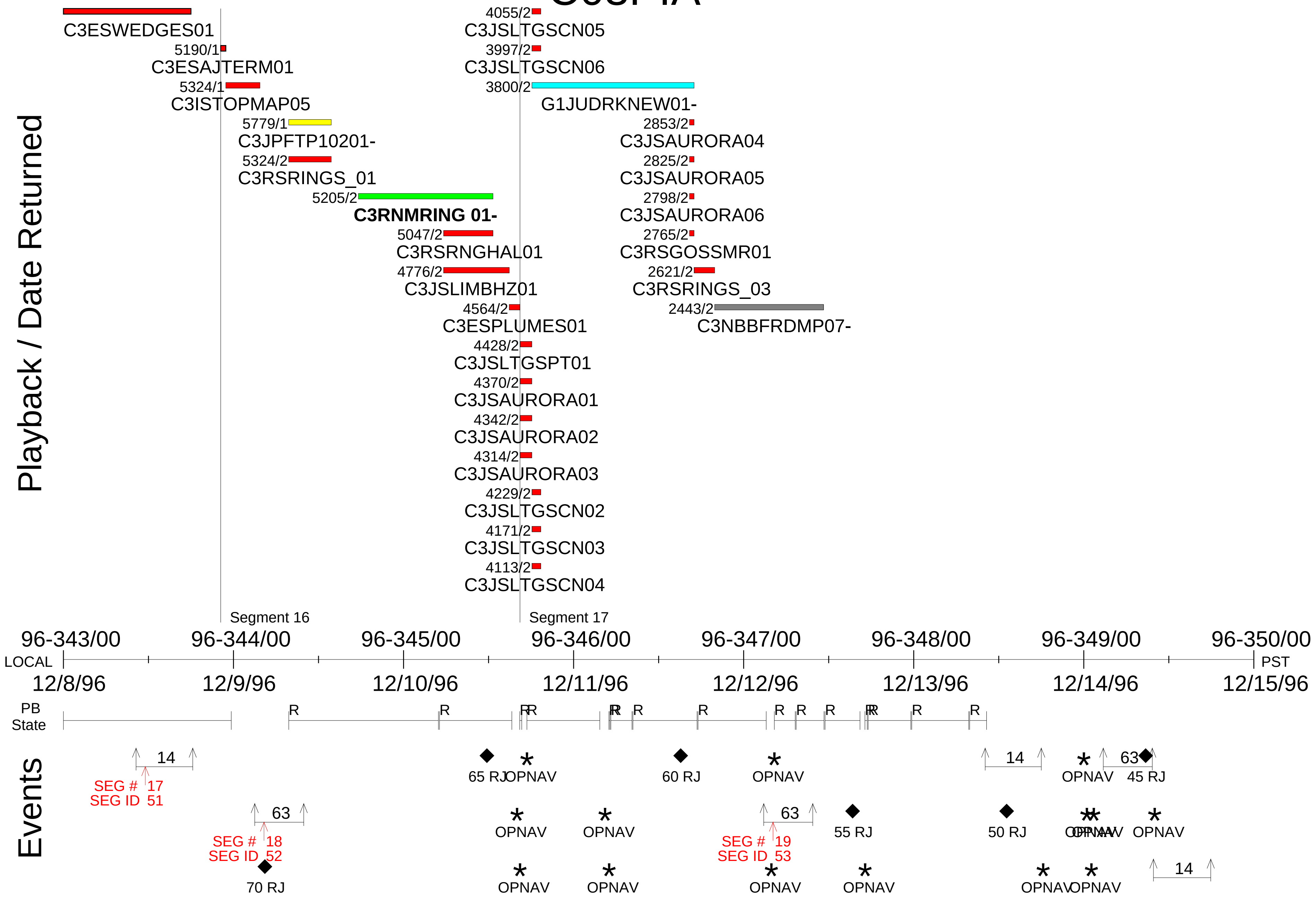

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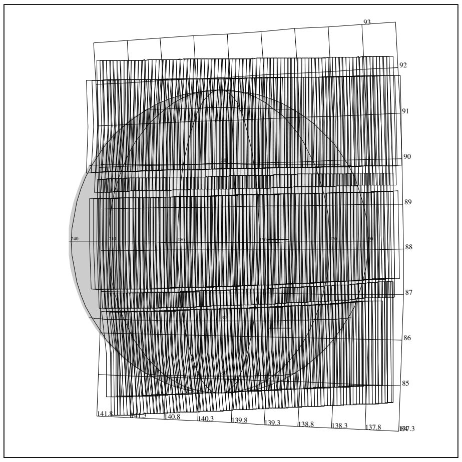
C3 NIMS A



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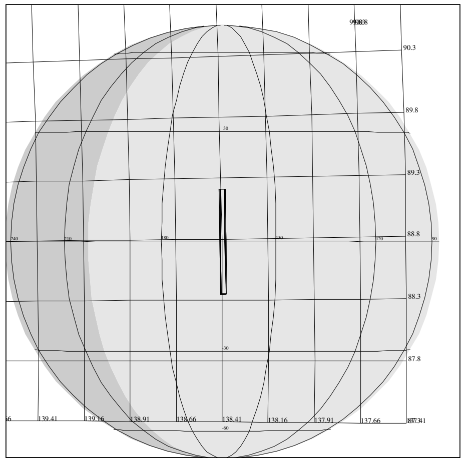

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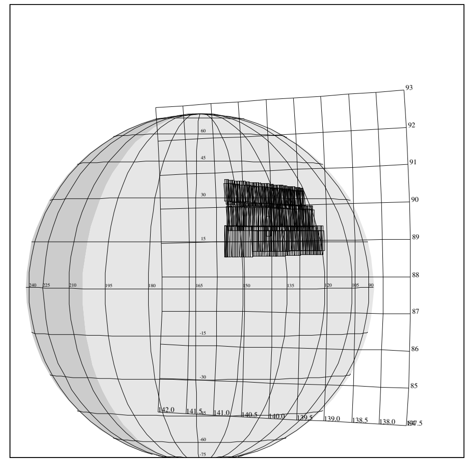

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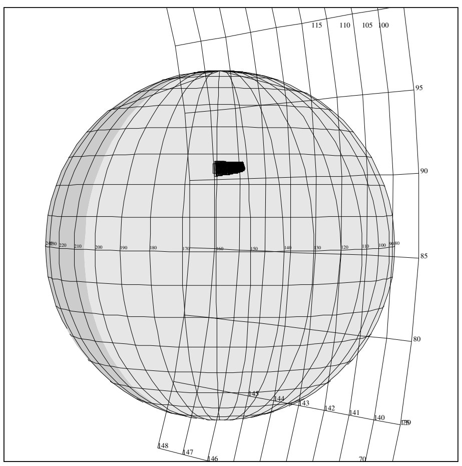

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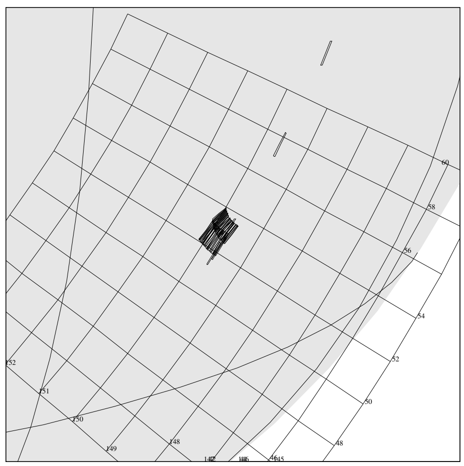

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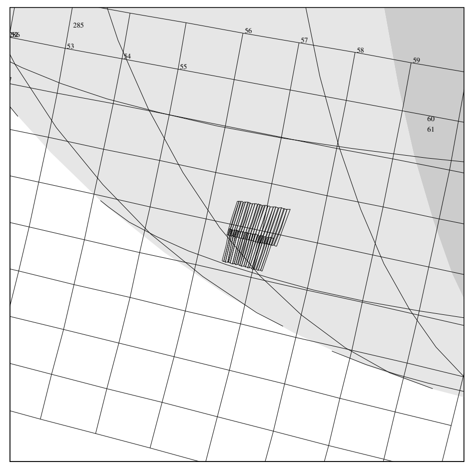

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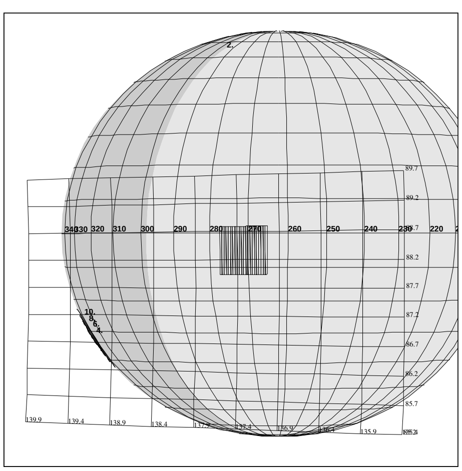

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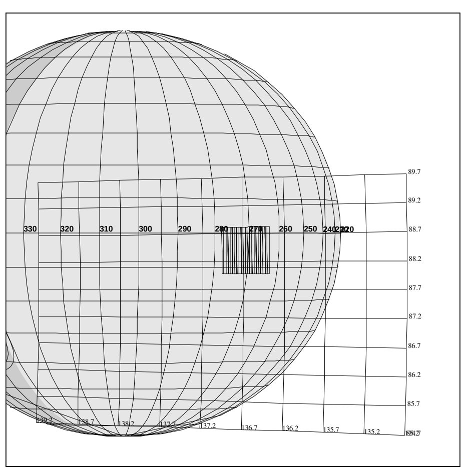

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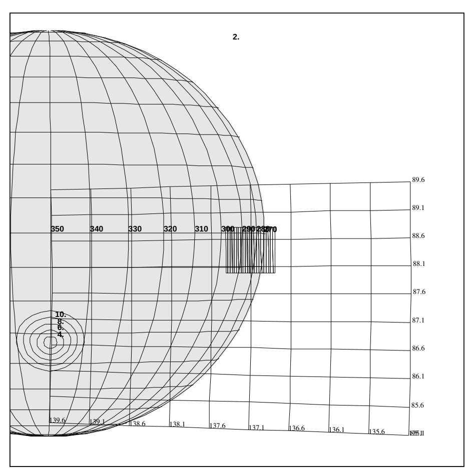

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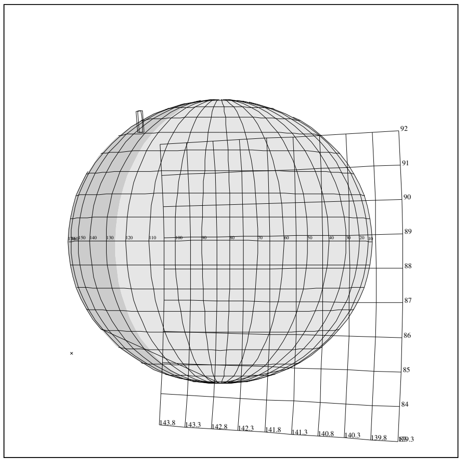

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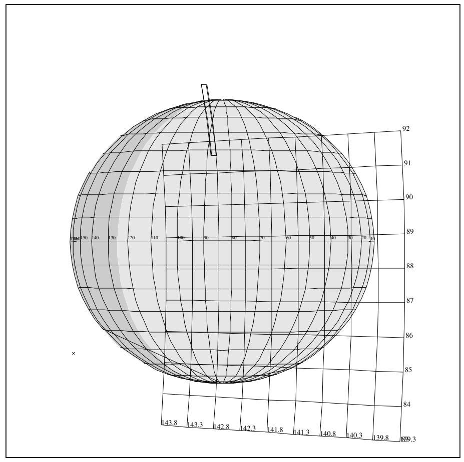

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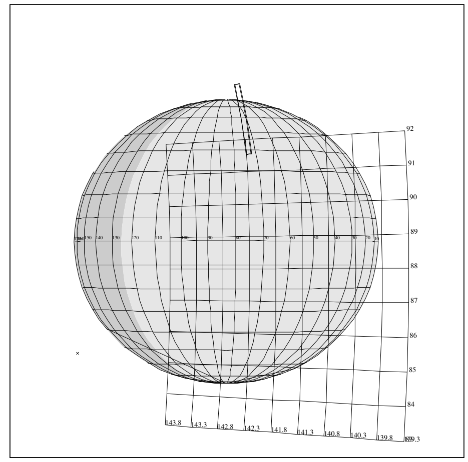

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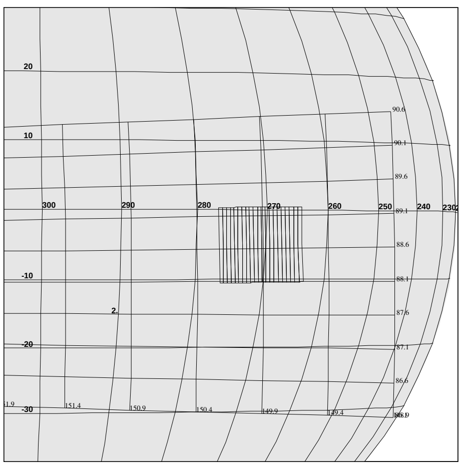

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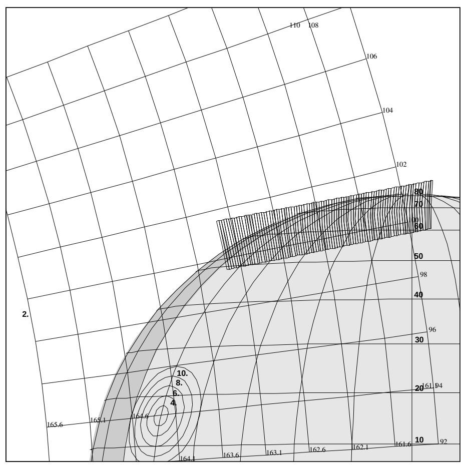

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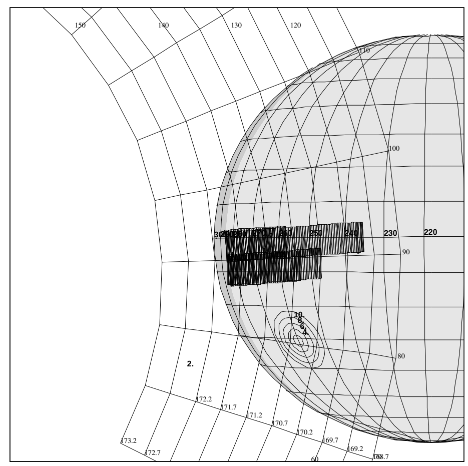

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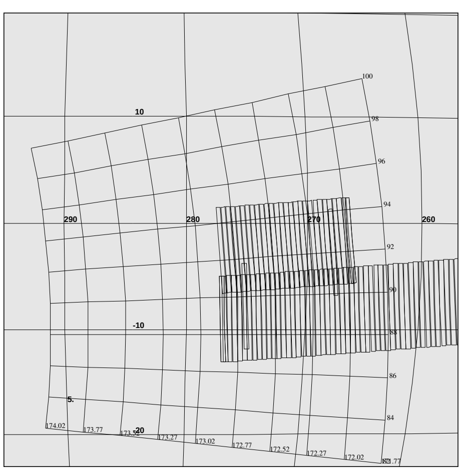

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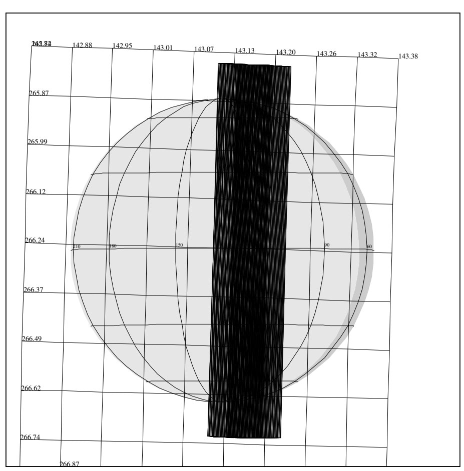

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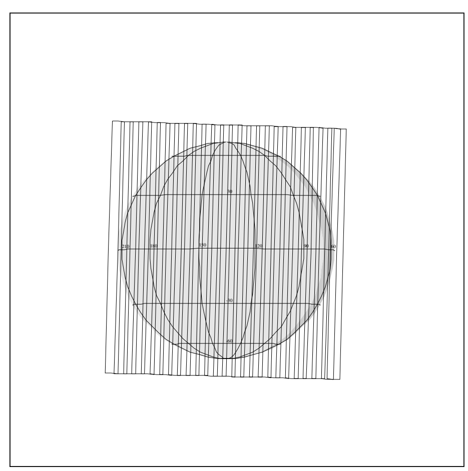

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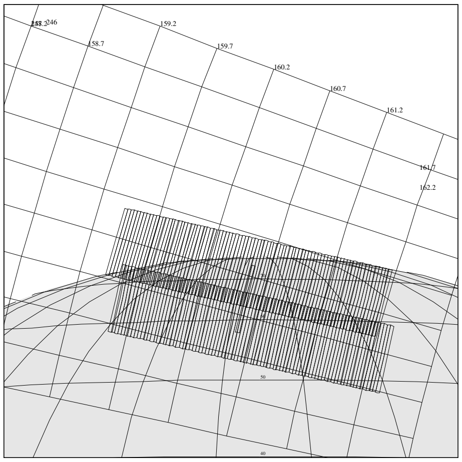
C3 NIMS C



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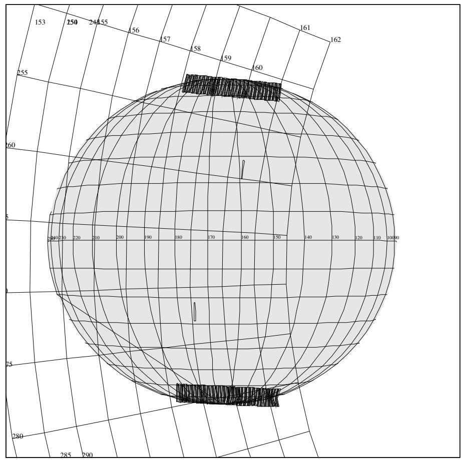

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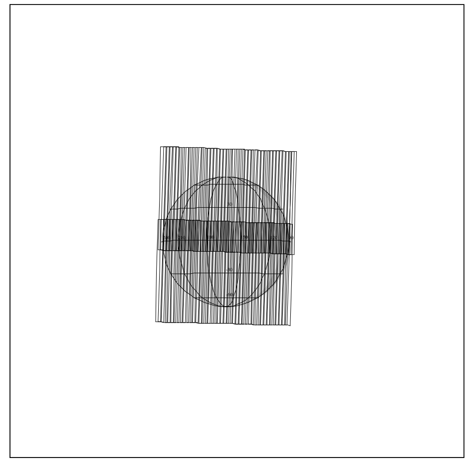

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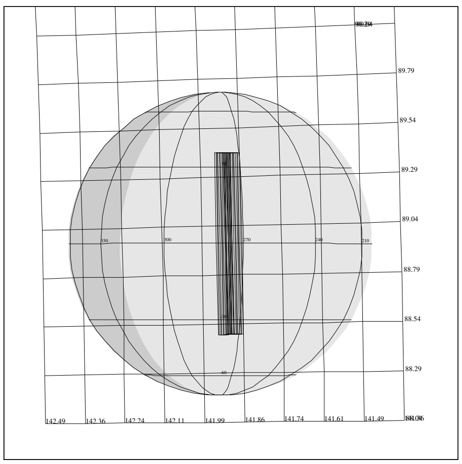

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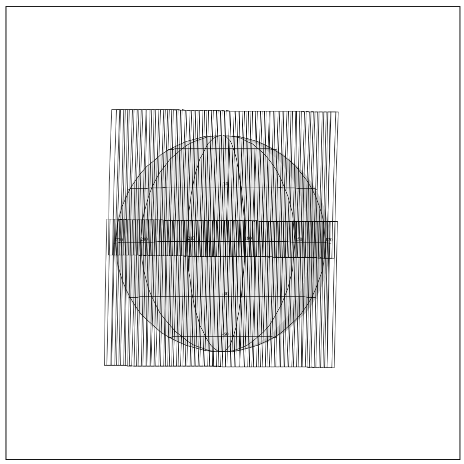

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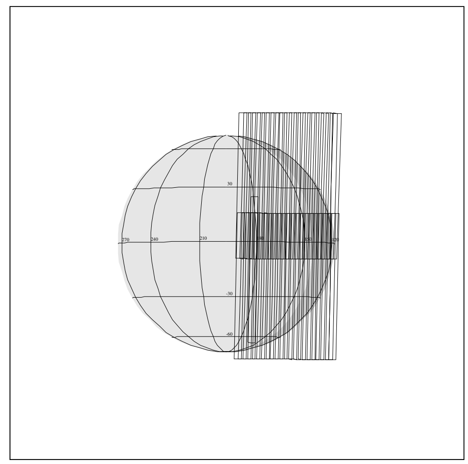

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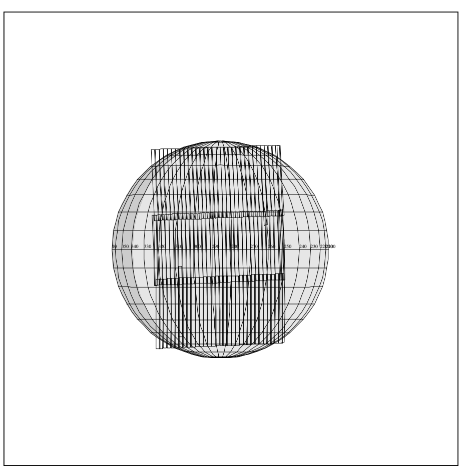

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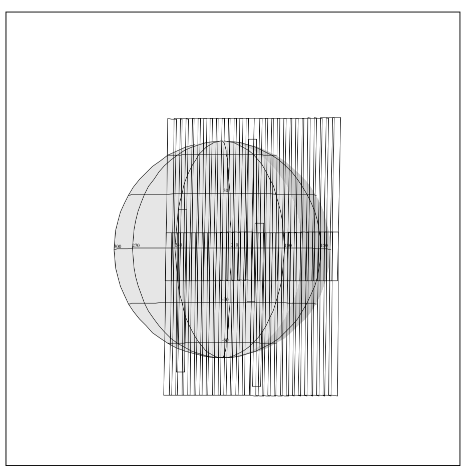

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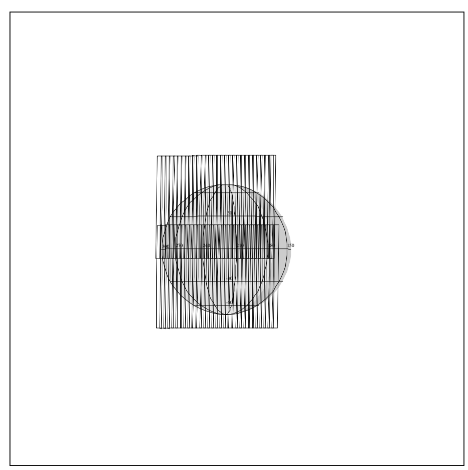

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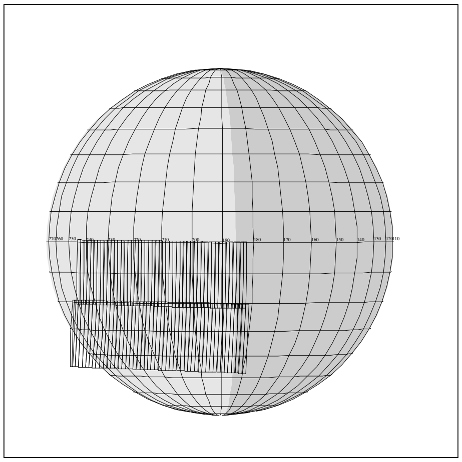

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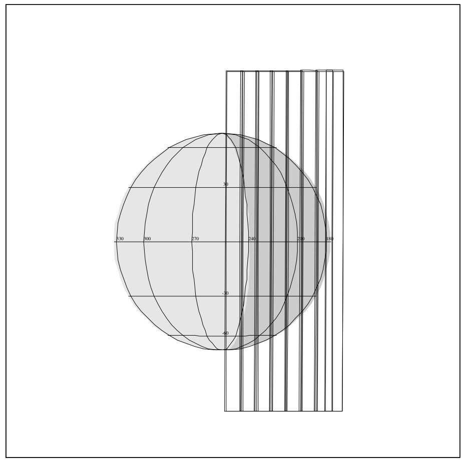

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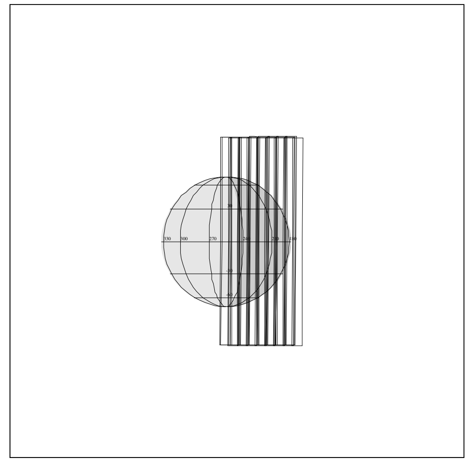

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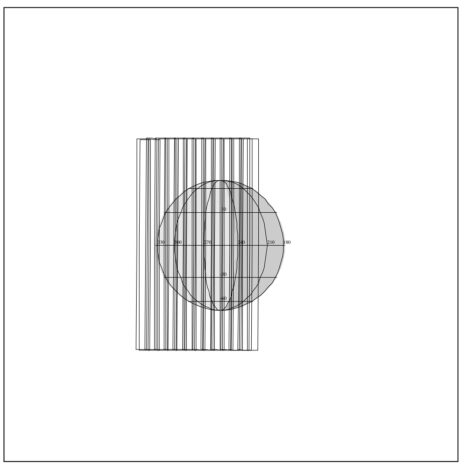

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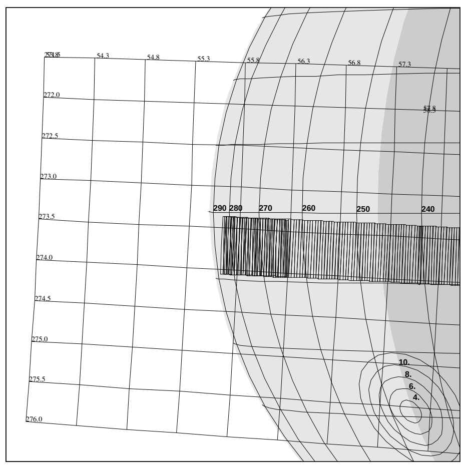

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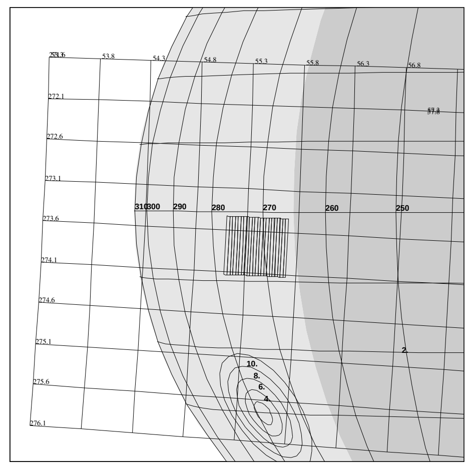

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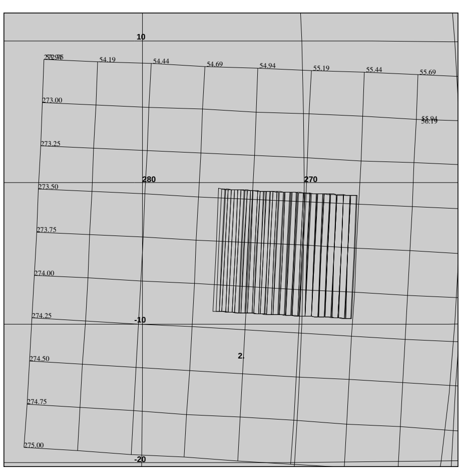

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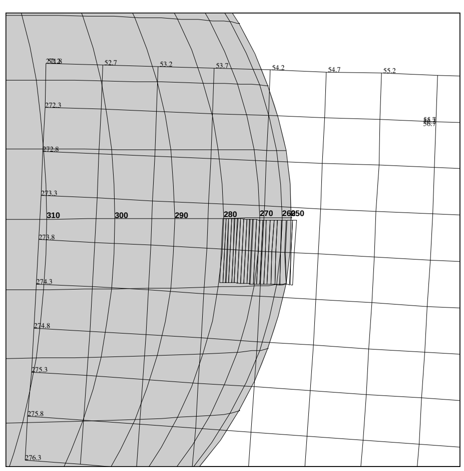

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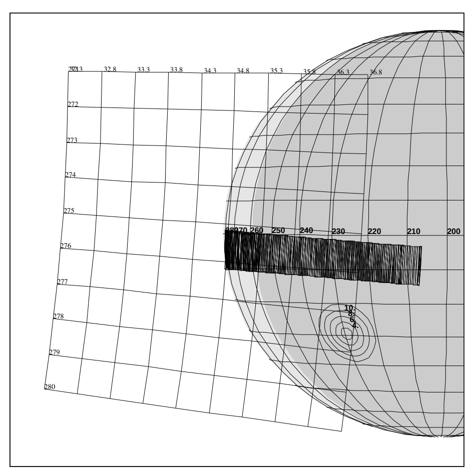

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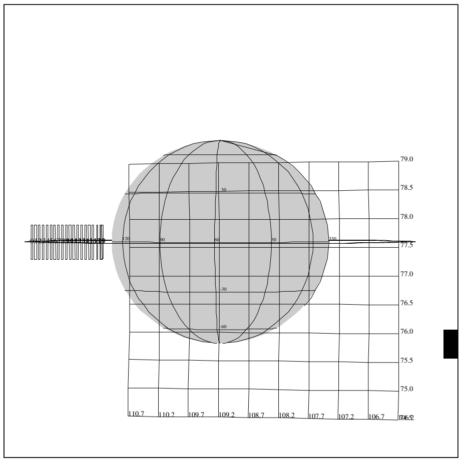
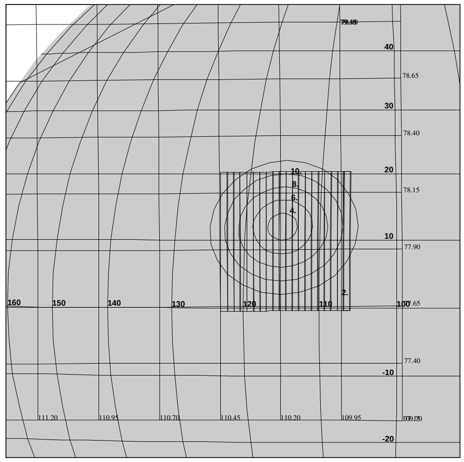
C3 NIMS E





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