

Table 01 Data Physical Parameter Codes

Cosmos	2/8/2012
Code	Parameter
01	Acceleration
02	Velocity
03	Displacement (absolute)
04	Displacement (relative)
:	
10	Angular acceleration
11	Angular velocity
12	Angular displacement
:	
20	Pressure, absolute
21	Pressure, relative (gage)
:	
30	Volumetric strain
31	Linear strain
:	
60	Wind speed
61	Wind direction
:	
* Cosmos Ihdr(2)	

Table 02 Data Units Codes

Cosmos	4/17/2013
Code	Units
01	sec
02	g
03	secs & g
04	cm/sec/sec
05	cm/sec
06	cm
07	in/sec/sec
08	in/sec
09	in.
10	gal
11	mg
12	mg
:	
23	deg/sec/sec
24	deg/sec
25	deg
:	
50	counts
51	volts
52	mvols
:	
60	psi
61	kpa
:	
70	miles/hour
:	

80	mstrain
:	
* Cosmos Ihdr(3)	

Table 03 Record Type Codes

Cosmos	4/17/2013
Code	Record type
01	Seismic trigger
02	Remote trigger
03	Preset trigger
04	Manual trigger
05	Function test
06	Active source test
:	
10	Sensor calibration
11	Amplifier calibration
12	Recorder calibration
13	Other calibration
:	
* Cosmos Ihdr(5)	

Table 04 Strong Motion Network Codes

Cosmos	4/11/2024	Abbrev.	IRIS
Code	Agency	(4-ltr)	Code
01	U.S. Coast and Geodetic Survey ⁽¹⁾	C&GS	C
02	USGS - National Strong Motion Project	USGS	NP
03	U.S. Bureau of Reclamation	USBR	RE
04	U.S. Army Corps of Engineers	ACOE	A
05	Calif.Geol.Survey/Div.Mines&Geology ⁽²⁾	CGS	CE
06	Calif.Inst.Technology/USGS, Pasadena	SCSN	CI
07	UC Berkeley	BDSN	BK
08	USGS - Northern Calif Regional Network	NCSN	NC
09	UC Santa Barbara	UCSB	SB
10	UC San Diego - ANZA	ANZA	AZ
:			
14	UNR - W. Great Basin/E. Sierra Nevada	UNR	NN
15	UW - Pacific NW Regional Network	PNSN	UW
16	Caltech - Tectonics Observatory	CTO	TO
17	UA - Anchorage Strong Motion Network	AEIC	AA
18	Community Seismic Network	CSN	CJ
:			
20	Calif. Dept. Water Resources	CDWR	WR
21	Pacific Gas & Electric	PG&E	PG
:			
30	USGS - National Seismic Network	NEIC	US
31	US Geological Survey Networks	USGS	GS
32	IRIS/USGS Network	IRGS	IU
33	Caribbean USGS Network	CUGS	CU
34	NetQuakes	NQGS	NQ
35	US National Seismic Network (USNSN)	USGS	US
36	Arkansas Seismic Network	ASN	AG

37	Alaska Regional Network	UAGI	AK
38	Arkansas Seismic Observatory, UALR	ASO	AO
39	Alaska Volcano Observatory	AVO	AV
40	Southern Appalachian Seismic Network	CERI	ET
	:		
46	Lamont-Doherty Coop. Seism. Network	LCSN	LD
47	LLNL NTS Network	LLNL	LL
48	Montana Regional Seismic Network	MRSN	MB
49	New England Seismic Network	NUSN	NE
50	Coop New Madrid Seismic Network, St Louis Univ	CNMSN	NM
51	Pacific Northwest Regional Seismic Network	PNSN	UW
52	Univ of Utah Seismograph Stations	UUSS	UU
53	Yellowstone Wyoming Seismic Network	YWSN	WY
54	Puerto Rico Strong Motion Program	UPRM	PR
55	South Carolina Seismic Network	SCSN	CO
56	Hawaiian Volcano Observatory Network	HVO	HV
57	New China Digital Seismograph Network	USGS	IC
58	IRIS/IDA Seismic Network	SIO	II
59	Intermountain West Seismic Network	USGS	IW
60	Central and Eastern US Network	CEUS	N4
61	USArray Transportable Array (EarthScope_TA)	IRIS	TA
62	Eastern Caribbean Seismograph Network	SRTC	TR
63	Univ Chile, Dept of Geophysics	CNSN	C
64	Southern Great Basin Network	SGBN	NS
65	Red Sísmica del Noroeste de México	RESN	BC
	:		
100	Taiwan Central Weather Bureau	CWB	TW
	:		
107	UC Berkeley - Geysers Seismic Network	BGSN	BG
108			GB
	:		
110	Bosai-Ken (NIED), Japan	NIED	BO
111	Univ. of Oregon Regional Network	UO	UO
	:		
199	Unspecified	UNK	--

* Notes:

(1) IRIS code of "C_" adopted for C&GS (which was terminated before IRIS was established)

(2) CGS and CDMG may be used interchangeably.

Cosmos code is located in Ihdr(11) (and secondarily in 12, 13, 14).

Table 05 Latitude/Longitude Datum Codes	
Cosmos	v1.20, 8/15/2001
Code	Datum
01	WGS84
02	NAD83
03	NAD27
04	WGS72
	:
* Cosmos Ihdr(16)	

Table 06 Station Type Codes	
Cosmos	4/10/2013
Code	Freefield, Ground Response or Reference Stations
01	Small fiberglass or other shelter (typ. $\sim 1\text{m}^3$; e.g., T-hut)
02	Small prefabricated metal bldg (typ. 1-2m x 1-2m x 2m high; eg, Armco)
03	Sensors buried/set in ground or deployed in shallow ground vault (within $\sim 1\text{m}$ of surface)
04	Reference station (1-2 story, small ($<4000\text{ ft}^2$ or 370m^2), light building without basement)
05	Base of building larger than above
06	Freefield, Unspecified
07	Ocean-bottom sensors
08	Sensors in small near-surface vault (1-2m deep)
09	Sensors in underground observatory or large vault ($\sim 3\text{m}^3$ or larger)
:	
	Instrumented Structural or Array Stations
10	Building, sensor in upper levels
11	Bridge
12	Dam
13	Wharf
14	Tunnel or mine adit (3m or more from surface)
15	Other lifeline structure
:	
20	Other structure
:	
50	Geotechnical array (borehole) sensors, 2m or greater deep
51	Other array
52	Borehole
:	
999	Unspecified
* Cosmos lhdr(19)	

Table 07 Earthquake Parameter Information Source Codes		
Code	4/17/2013	IRIS
Cosmos	Agency	Code
01	USGS	US
02	NEIC, Golden, Colo.	US
03	UC Berkeley	BK
04	Caltech, Pasadena	CI
05	NCSN, Northern Calif.	NC
06	SCSN, Pasadena, Calif.	CI
07	UCSD, San Diego, Calif.	AZ
08	UNR, Reno, Nevada	NN
09	USCGS	C
10	CISN	-
11	CGS	CE
:		
100	CWB, Taiwan	TW
:		
110	Japan Meteorological Agency	JP

111	Bosai-Ken (NIED), Japan	BO
:		
200	Other	
:		
* Cosmos Ihdr(25)		

Table 08 Recorder Timing Type Codes

Cosmos	4/3/2023
Code	Time Source for record
00	None
01	Recorder clock
02	Auxiliary clock (e.g., TCG)
03	Radio time signal (e.g., WWVB, WWVH)
04	Clock that tracks radio signal (WWVB, etc.)
05	GPS signal
06	Network time protocol (NTP)
:	
20	Other
:	
* Cosmos Ihdr(47)	

Table 09 Recorder/Datalogger Codes

Cosmos	10/31/2025
Code	Recorder/Datalogger
Analog Recorders	
1	C&GS Standard, USC&GS
2	AR-240, Teledyne
3	RFT-250, Teledyne
4	RFT-350, Teledyne
5	MO-2 (New Zealand)
6	RMT-280
7	SMA-1, Kinemetrics
8	SMA-2, Kinemetrics
9	SMA-3, Kinemetrics
10	CRA-1, Kinemetrics
:	
Digital Recorders	
100	DSA-1, Kinemetrics
101	DSA-3, Kinemetrics
102	PDR-1, Kinemetrics
103	PDR-2, Kinemetrics
104	SSA-1, Kinemetrics
105	SSA-2, Kinemetrics
106	SSA-16, Kinemetrics
107	SSR-1, Kinemetrics
108	K2, Kinemetrics
109	Etna, Kinemetrics
110	Mt Whitney, Kinemetrics
111	Everest, Kinemetrics
112	Makalu, Kinemetrics
113	Etna-A, Kinemetrics
114	Etna-2, Kinemetrics
:	

120	QDR, Kinemetrics
130	Granite, Kinemetrics
131	Basalt, Kinemetrics
132	Obsidian, Kinemetrics
133	Obsidian Multichannel, Kinemetrics
:	
200	DR-100, Sprengnether
201	DR-200, Sprengnether
202	DR-300, Sprengnether
204	DR-3016, Sprengnether
203	DR-3024, Sprengnether
:	
250	Trident, Nanometrics
251	Linx, Nanometrics
252	Titan-SMA
253	Titan-EA
:	
300	DCA-300, Terratech
301	DCA-310, Terratech
302	DCA-333, Terratech
310	IDS-3602, Terratech (IDS)
311	IDS-3602A, Terratech (IDSA)
:	
400	A700, Geotech
401	A800, Geotech
402	A900, Geotech
403	A900A, Geotech
:	
500	GEOS, US Geological Survey
:	
550	GMS-18 (NetQuakes), Geosig
551	GRS-18, Geosig
:	
600	Q4120, Quanterra
601	Q4128a, Quanterra
602	Q730, Quanterra
603	Q736, Quanterra
604	Q980, Quanterra
605	Q330, Quanterra
606	Q680, Quanterra
:	
650	CMG-DM24-EAM, Guralp
651	Minimus, Guralp
:	
700	72A, RefTek
701	130-01, Reftek
702	130-SM, Reftek
703	130-SMA, Reftek
704	130-ANSS, Reftek
705	130-SM5V, Reftek
706	130-MC, Reftek
707	130-SMHR, Reftek
710	148-01, Reftek (QuakeRock)
711	148-02, Reftek
712	148-03, Reftek
713	148-04, Reftek

:	
720	160-01, Reftek
721	160-02, Reftek
722	160-03, Reftek
724	160-04, Reftek
729	160-09, Reftek
:	
730	180-01, Reftek (Wrangler)
731	180-SMA, Reftek
732	180-SMHR, Reftek
733	180-MC, Reftek
:	
750	STMicroelectronic
:	
800	ShvaPl, SheevaPlug
801	RPi3B, Raspberry Pi
802	RPi3B+, Raspberry Pi
803	RPi4B, Raspberry Pi
804	RPi5, Raspberry Pi
:	
-	-
:	
* Cosmos Ihdr(30)	

Table 10 Sensor Codes	
Cosmos	1/4/2024
Code	Sensor
Accelerometers	
1	Optical-mechanical (SMA,RFT,etc)
2	FBA-1, Kinematics
3	FBA-3, Kinematics
4	FBA-11, Kinematics
5	FBA-13, Kinematics
6	FBA-13DH, Kinematics
7	FBA-23, Kinematics
8	FBA-23DH, Kinematics
20	Episensor, Kinematics
21	Episensor ES-U, Kinematics
22	Episensor ESDH, Kinematics
23	Episensor ES-US, Kinematics
:	
50	FBX-23, Sprengnether
51	FBX-26, Sprengnether
:	
100	SSA 120, Terratech
101	SSA 220, Terratech
102	SSA 320, Terratech
:	
150	731A, Wilcoxon
:	
200	CMG-5, Guralp
201	CMGXXX
202	Fortis, Guralp
:	

250	131A-02/1, Reftek
251	131A-02/3, Reftek
252	131A-02/BH, Reftek
253	131B-01/1, Reftek
254	131B-01/3, Reftek
255	131A-02/3/INT, Reftek
256	131-8019, Reftek
257	131D-01/1, Reftek
258	131D-01/3, Reftek
259	131D-01/3/INT, Reftek
260	147-01/3/INT, Reftek
261	147-01/3, Reftek
262	147A-01/3/INT, Reftek
263	147A-01/3, Reftek
264	147A-01/1, Reftek
:	
300	ADXL325, Analog Devices
:	
330	SF2005 MEMS, Colibrys
:	
350	LIS344ALH, STMicroelectronics
:	
380	7751-500, Endevco
:	
400	AC63, Geosig
:	
450	Titan, Nanometrics
:	
480	TSA-100S, Metrozet
:	
500	350-LIS344ALH
:	
550	Phidget 1056, Phidget
551	Phidget 1056_1, Phidget
552	Phidget MOT0110_0, Phidget
:	
1001	SS-1 Ranger, Kinematics
1002	MBB-2 Broadband, Kinematics
:	
1050	S-3000, Sprengnether
1051	S-6000, Sprengnether
:	
1100	Trillium 240, Nanometrics
:	
1201	CMG-1, Guralp
1202	CMG-3T, Guralp
1203	CMG-3ESP, Guralp
1204	CMG-40, Guralp
:	
1250	STS-1, Strecheisen
1251	STS-2, Strecheisen
:	
1300	L4, Mark Products

1301	L22, Mark Products
:	
1350	151, Reftek
1351	151A, Reftek
1352	151B, Reftek
1360	Colt, Reftek
:	
:	
3000	Pressure series
3001	PDCR-35/D, Druck
3002	PDCR-940, Druck
3003	PTX/PCDR-1830, GE/Druck
:	
3010	30, MEAS/KPSI
3011	330, MEAS/KPSI
3012	730, MEAS/KPSI
:	
3020	8WD, ParoScientific
:	
3200	Wind Series
3201	Young - Speed
3202	Young - Direction
:	
3500	Dilatometer series
:	
4000	Relative displacement series
4001	UltraS, Senix Ultrasonic
4002	TS-30S1, Senix Ultrasonic
:	
4020	Extensometer, FirstMark
:	
4500	Rotational series
4501	EENT
:	
4800	Tiltmeter Series
4801	Model 801-S Longitudinal, Jewell Inst.
4802	Model 801-S Transverse, Jewell Inst.
:	
9000	Other sensor
:	
* Cosmos lhdr(52)	

Table 11 Sensor Direction Codes*

Cosmos	12/7/2011
Code	Orientation
1-360	Horizontal azimuth, clockwise (east) from North
:	
400	Up
401	Down
402	Vertical, sense not indicated
:	
500	Radial, inward (-500 for outward)

501	Transverse, 90 deg CW from radial comp. (-501
:	for CCW from radial comp.)
:	
600	Longitudinal (relative to structure)
601	Tangential (relative to structure)
:	
700	H1 (horiz. sensor, azimuth unknown)
701	H2 (horiz. sensor, azimuth unknown)
702	X (horiz. sensor, azimuth unknown)
703	Y (horiz. sensor, azimuth unknown)
704	Z (horiz. sensor, polarity not indicated)
:	
1001-	Horizontal azimuth relative to Chn 1, if absolute
1360	not known (e.g., Chn 2 is 1090 if it is 90 deg
:	clockwise of Chn 1)
:	
2000	Other (described in comments)
:	
*Notes:	
1) The direction specified is the direction of motion of the ground (or the structural element the sensor is attached to) that corresponds to upward motion of the trace and positive-going signal values.	
2) Referenced in Cosmos Ihdr(54) for absolute, and in Ihdr(55) for relative values.	

Table 12 Codes for Filter Types used in Processing		
Cosmos		5/23/2008
Code	Filter type	
0	None	
1	Rectangular	
2	Cosine bell	
3	Ormsby	
4	Butterworth, single direction (causal)	
5	Butterworth, bi-directional (noncausal)	
6	Bessel	
:		
Note:		
Used in Cosmos Ihdr(61) and Ihdr(62)		