

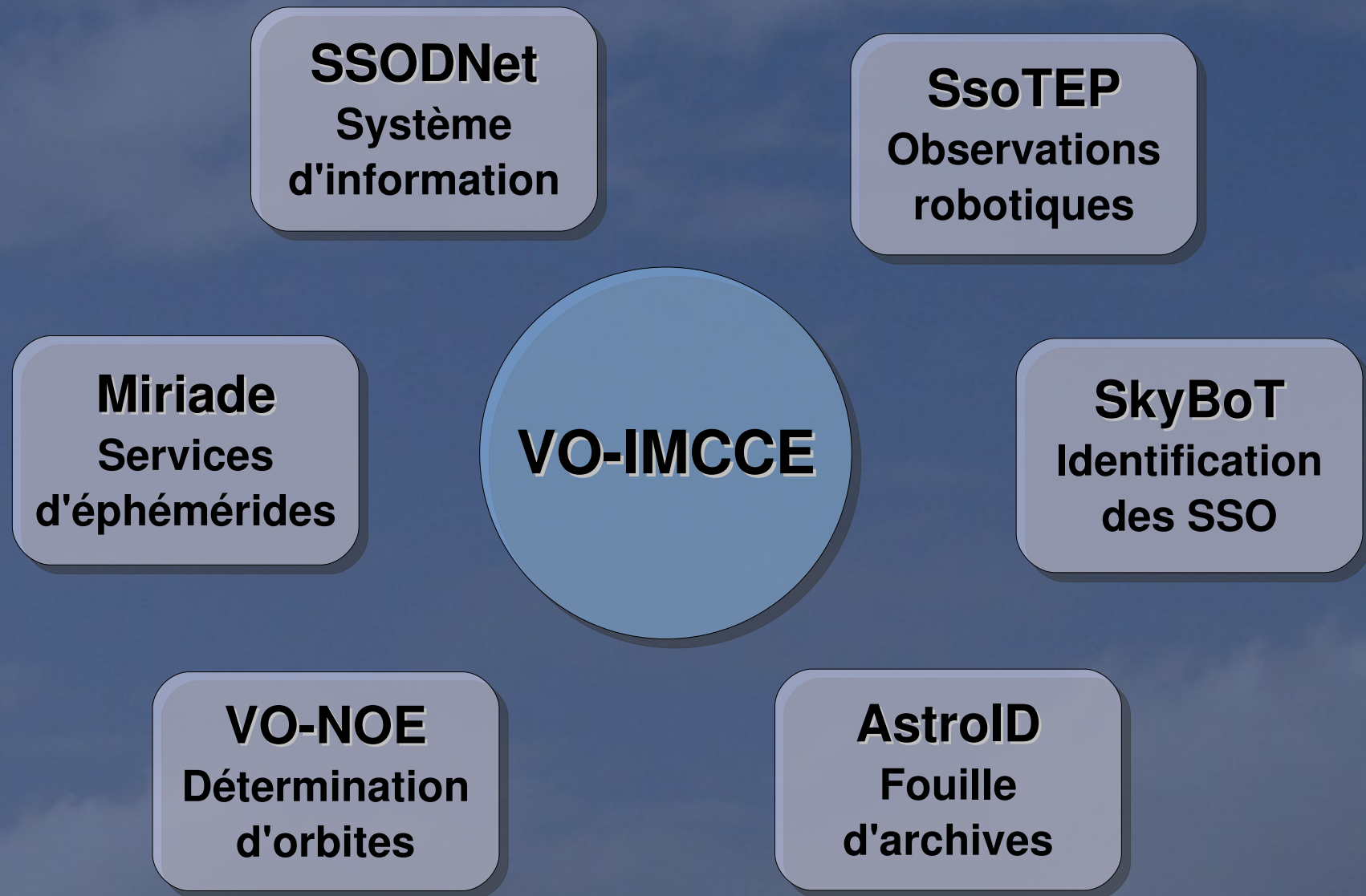
Outils & Services VO de l'IMCCE



J. Berthier, W. Thuillot, F. Vachier, V. Lainey

IMCCE - Observatoire de Paris - CNRS, France
(berthier@imcce.fr)

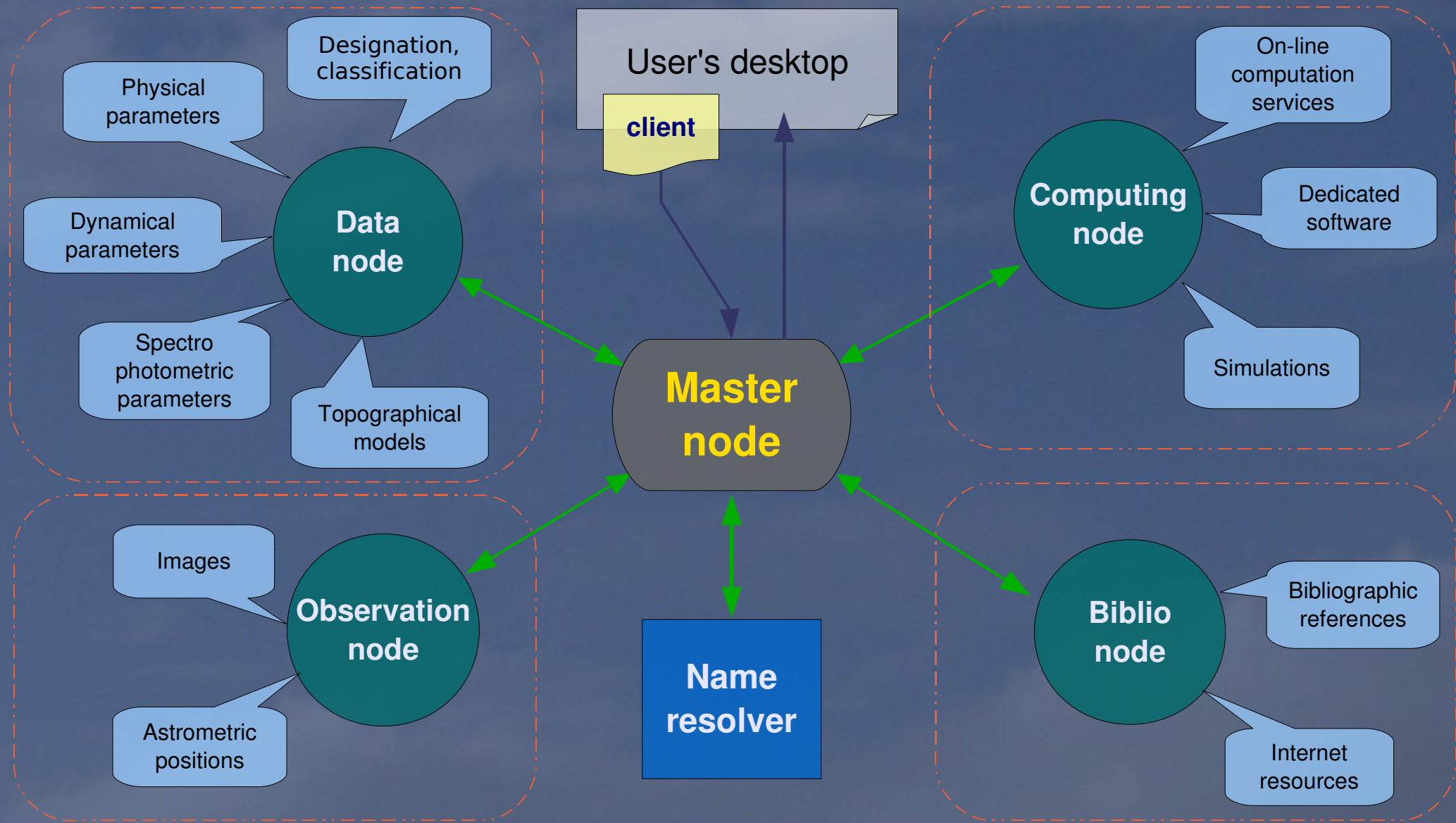
VO-IMCCE - Project



.: SSODNet :.

- Fournir un système d'information dédié aux SSO
- Fournir un « **resolver** » de nom pour les SSO
- Permettre une inter-connexion / inter-opérabilité entre les utilisateurs et les bases de données distribuées
- Proposer aux utilisateurs un accès aux BDD via une requête unique
- Permettre aux dépositaires de BDD de les rendre accessible auprès de la communauté astronomique

SSODNet Architecture



The prototype in action

SSODNET QUERY FORM

To search for solar system object data, please fill the form below and submit the query (button 'Identifier'). The identified bodies will then be displayed at the bottom of the page. Two cases arise:

- if only one object has been identified, a new window will be automatically open to display the object data (be careful to allow the popup from www.imcce.fr in the preferences of your web browser).
- if two or more objects are identified, click on the row corresponding to the object of your choice to display its data.

You might have to wait a while before you get a response depending on the resources you choose to seek. Go to the [SSODNET Home Page](#) for details about the service.

Read the [documentation](#) if you mind how to do, or just put your mouse above the [?] for quick help.

▸ Identifier: [?]

▸ Type: [?]

[[Advanced search](#)]

→ The query form can be easily implemented in any web site

Asteroid 22 Kalliope

Identity card of the object

Type	ID#	Name	Parent	Satellite(s)
Asteroid	22	Kalliope	sun	1

Natural satellite(s)

ID	Name
379389	Linus

Physical parameters

SO	Ref	Lambda deg	Beta deg	WO deg	SRot	SP d	ZeroPhase jd	TS	ab	bc	rx km	ry km	rz km	Mass kg	J2	J4	BibRef	Note
1	ECJ2000	9.8	-2.7	166.72	P	0.1728416554	2436258.63627	utc	1.32	1.2	115.72	87.67	73.06	0.7541	0.152	0	+A0	Descamps04
2	ECJ2000	9.8	-2.7	166.72	P	0.1728416554	2436258.63627	utc	1.32	1.2	115.72	87.67	73.06	1.8	0.17	0	+A0	Clergeon05
3	ECB1950	21	-23	196.54	R	0.17284154	2446819.37561862	utc	1.32	1.2	115.72	87.67	73.06	0	0	0	EA	Magnusson98
4	ECB1950	191	-2	95.71	R	0.17284154	2446819.37561862	utc	1.32	1.2	115.72	87.67	73.06	0	0	0	EA	Magnusson98
5	ECB1950	190	-12	89.25	R	0.17284154	2446819.37561862	utc	1.33	1.27	118.53	89.12	70.17	0	0	0	?	? of. SOL 6
6	ECB1950	21	-23	196.54	R	0.17284154	2446819.37561862	utc	1.32	1.2	115.72	87.67	73.06	0	0	0	+A0	Marchis02
7	ECB1950	21	-23	196.54	R	0.17284154	2446819.37561862	utc	1.32	1.2	115.72	87.67	73.06	0	0	0	+A0	Marchis02
8	ECB1950	21	-23	195.25	R	0.17284154	2446819.37561862	utc	1.32	1.2	115.72	87.67	73.06	0	0	0	+A0	testgrille
9	ECB1950	33	-10	188.64	R	0.17284154	2446819.37561862	utc	1.32	1.2	115.72	87.67	73.06	0	0	0	+A0	testgrille
10	ECB1950	33.8	-8	203.91	R	0.17284154	2446819.37561862	utc	1.32	1.2	115.72	87.67	73.06	0	0	0	+A0	testgrille
11	ECJ2000	9.8	-2.7	34.5	R	0.17284154	2446819.37561862	utc	1.32	1.2	115.72	87.67	73.06	0	0	0	+A0	Descamps04
12	ECJ2000	20.311	-22.886	1.956908	P	0.1728416554	2436258.63627	utc	1.32	1.2	115.72	87.67	73.06	0	0	0	Mikk	TEST
13	ECJ2000	20.311	-22.886	1.956908	P	0.1728416554	2436258.63627	utc	1.32	1.2	115.72	87.67	73.06	0	0	0	Mikk	Mikko02

ASTORB orbital parameters

H	G	B_V	Diam	SpClass	OrbArc	NumObs	OscEpoch	a	e	i	MeanAnomaly	ArgPerihelie	LongAscNode
<i>mag</i>		<i>mag</i>	<i>km</i>		<i>d</i>			<i>au</i>		<i>deg</i>	<i>deg</i>	<i>deg</i>	<i>deg</i>
6.45	0.21	0.69	181	M	55913	1468	2007-7-19	2.90853878	0.10271822	13.710502	62.916092	355.967363	66.235564











ASTORB orbital parameters - Supplement

OrbComputer	CompEpoch	CEU_value	CEU_rate	CEU_Epoch	PEU_value	PEU_Epoch	GPEU_fromCEU	GPEU_fromPEU	Note
		<i>arcsec</i>	<i>arcsec/d</i>		<i>arcsec</i>				
E. Bowell	2007-5-20	0.019	6.6e-07	2007-7-21	0.037	2008-3-21	0.046 2015-9-3	0.046 2015-9-3	000000

Large Adaptive Optic Survey of Asteroids - Observation list

ID#	Name	Date	Filter	IntTime	Telescope	Status	Info
22	Kalliope	2003-01-14 08:53:59	Ks	240	VLT	Reduced	Resolved/Moonlet
22	Kalliope	2003-01-14 09:00:19	H	120	VLT	Reduced	Resolved/Moonlet
22	Kalliope	2003-01-14 09:07:39	J	240	VLT	Reduced	Resolved/Moonlet
22	Kalliope	2003-02-14 08:21:57	H	24.1	VLT	Reduced	Not_Resolved/Moonlet
22	Kalliope	2003-07-15 00:58:10	H	357.8	VLT	Reduced	Not_Resolved/Moonlet
22	Kalliope	2003-07-16 00:03:15	H	34.5	VLT	Reduced	Not_Resolved/Moonlet
22	Kalliope	2003-07-17 00:24:36	H	171	VLT	Reduced	Not_Resolved
22	Kalliope	2004-03-03 10:08:26	H	24	VLT	Reduced	Not_Resolved/Moonlet
22	Kalliope	2004-03-04 10:14:42	H	45	VLT	Reduced	Resolved/Moonlet
22	Kalliope	2004-06-04 09:46:02	Kp	9	Gemini	Reduced	Resolved/Moonlet
22	Kalliope	2004-06-04 09:48:13	Kp	60	Gemini	Partial	Not_Resolved/Moonlet
22	Kalliope	2004-06-05 08:21:22	Kp	6	Gemini	Reduced	Resolved/Moonlet
22	Kalliope	2004-06-05 11:07:24	Kp	10	Gemini	Reduced	Resolved/Moonlet
22	Kalliope	2004-06-05 12:02:47	Kp	18	Gemini	Reduced	Resolved/Moonlet
22	Kalliope	2004-06-05 13:22:58	Kp	6	Gemini	Reduced	Resolved/Moonlet
22	Kalliope	2004-06-28 02:20:44	Ks	600	VLT	Reduced	Resolved/Moonlet
22	Kalliope	2004-07-24 04:06:17	H	120	VLT	Reduced	Resolved/Moonlet
22	Kalliope	2004-07-25 05:40:48	H	60	VLT	Reduced	Not_Resolved/Moonlet
22	Kalliope	2004-07-25 05:47:42	H	40	VLT	Reduced	Not_Resolved/Moonlet
22	Kalliope	2004-07-26 01:26:47	H	60	VLT	Reduced	Resolved/Moonlet

Large Adaptive Optic Survey of Asteroids - Poly multiple results

ID#	Name	Date	a	MagLim	rLimit	IntTime	Airmass	S/N	FWHM	HillSphere	Dm@2/100xRh	Diam@2/100xRh	Dm@1/4xRh	Diam@1/4xRh	Profil
			mag/arcsec		arcsec	s			arcsec	ka		ka		ka	
22	Kalliope	2003-01-14 08:53:59	-4.51	-8.53	0.78	240	1.3	5789.95	0.1	53280.8	-4.64	21.38	-8.47	3.66	
22	Kalliope	2003-01-14 09:00:19	-2.96	-8.19	0.94	120	1.28	4058.98	0.1	53280.8	-4.56	22.12	-8.22	4.11	
22	Kalliope	2003-01-14 09:07:39	-2.87	-8.12	1.11	240	1.27	3992.25	0.1	53280.8	-4.55	22.31	-8.14	4.27	
22	Kalliope	2003-02-14 08:21:57	-2.46	-8.17	1.92	24.1	1.25	4588.43	0.16	53280.8	-4.49	22.89	-8.23	4.09	
22	Kalliope	2003-07-15 00:58:10	-3.78	-9.65	1.98	357.8	1.72	16209.4	0.2	53280.8	-3.73	32.52	-9.69	2.09	
22	Kalliope	2003-07-16 00:03:15	-6	-8.7	0.92	34.5	1.44	5712.98	0.09	53280.8	-4.58	21.97	-8.7	3.29	
22	Kalliope	2003-07-17 00:24:36	-2.81	-8.58	2.36	171	1.54	5028.06	0.42	53280.8	-3.38	38.23	-8.6	3.45	
22	Kalliope	2004-03-03 10:08:26	-4.73	-7.59	0.97	24	1.03	2818.5	0.11	53280.8	-5.84	12.28	-7.66	5.32	
22	Kalliope	2004-03-04 10:14:42	-5.81	-6.13	0.61	45	1.02	569.98	0.1	53280.8	-5.68	13.23	-6.12	10.82	
22	Kalliope	2004-06-04 09:46:02	-5.7	-9.33	1.12	9	1.47	11255.8	0.12	53280.8	-7.87	4.82	-9.33	2.46	
22	Kalliope	2004-06-05 08:21:22	-3.24	-9.11	1.07	6	1.73	8293.78	0.11	53280.8	-4.39	23.94	-9.08	2.77	
22	Kalliope	2004-06-05 11:07:24	-2.63	-8.1	1.53	10	1.46	3663.58	0.13	53280.8	-4.67	21.09	-8.09	4.37	
22	Kalliope	2004-06-05 12:02:47	-2.2	-8.89	1.77	18	1.59	8075.86	0.11	53280.8	-4.44	23.44	-8.91	2.99	
22	Kalliope	2004-06-05 13:22:58	-3.68	-8.43	1.36	6	2.21	4421.64	0.13	53280.8	-5.09	17.36	-8.43	3.72	
22	Kalliope	2004-06-28 02:20:44	-3.62	-8.82	0.82	600	1.01	9433.19	0.11	53280.8	-7.57	5.54	-8.92	2.98	
22	Kalliope	2004-07-24 04:06:17	-3.62	-8.3	1.06	120	1.34	6516.74	0.11	53280.8	-6.07	11.04	-8.49	3.64	
22	Kalliope	2004-07-25 05:40:48	-1.81	-6.25	1.29	60	2.24	1270.13	0.15	53280.8	-4.59	21.86	-6.24	10.22	
22	Kalliope	2004-07-25 05:47:42	-1.68	-5.91	1.25	40	2.35	696.83	0.2	53280.8	-4.19	26.27	-6	11.4	
22	Kalliope	2004-07-26 01:26:47	-4.87	-8.08	0.95	60	1.01	3642.58	0.1	53280.8	-6.58	8.75	-8.09	4.36	
22	Kalliope	2004-07-26 03:22:25	-3.47	-7.04	1.26	60	1.21	1532.42	0.17	53280.8	-5.2	16.53	-7.07	6.98	
22	Kalliope	2004-07-26 04:51:14	-4.23	-8	1.19	45	1.68	2894.58	0.12	53280.8	-6.18	10.53	-7.7	5.22	
22	Kalliope	2004-10-07 00:31:15	-2.91	-6.64	1.31	180	1.51	984.29	0.15	53280.8	-4.17	26.47	-6.65	8.48	
22	Kalliope	2004-10-07 00:45:10	-4.12	-8.06	1.02	360	1.61	3713.67	0.11	53280.8	-4.84	19.46	-8.09	4.35	

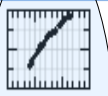
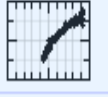
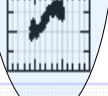
Asteroid Albedos V1.1

TRIAD_albedo	TRIAD_quality_code	IMPS_albedo	IMPS_uncertainty	IMPS_quality_code	Pmin_albedo	H_albedo	Polarization_albedo	Pol_quality_code	Radar_albedo	Radar_uncertainty	Radar_num_obs
0.108	2	0.1419	0.007	1	0.123	0	0.123	2	0	0	0

Asteroid Taxonomy V5.0

Tholen_class	Tholen_param	Barucci_class	Barucci_param	Tedesco_class	Tedesco_param	Howell_class	Howell_param	SMASS_class	SMASS_param	Bus_class	Bus_param	S3OS2_class_th	S3OS2_class_bb	Comment
M	76	M0	7I	M	2I	M	65			X	s			

Small Main-Belt Asteroid Spectroscopic Survey

Snapshot	Data	BibRef
	smassir/a000022. [3]	Burbine, T. H. (2000). Forging Asteroid-Meteorite Relationships Through Reflectance Spectroscopy. Ph. D. Thesis, Massachusetts Institute of Technology / Burbine, T. H. and Binzel, R. P. (2002). Small Main-Belt Asteroid Spectroscopic Survey in the Infrared, Icarus 159, 468-499
	smass2/a000022. [2]	Bus, S. J. (1999). Compositional Structure in the Asteroid Belt: Results of a Spectroscopic Survey. Ph. D. Thesis, Massachusetts Institute of Technology / Bus, S. J. and Binzel, R. P. (2002). Phase II of the Small Main-Belt Asteroid Spectroscopic Survey: The Observations, Icarus 158, 106-145 / Bus, S. J. and Binzel, R. P. (2002). Phase II of the Small Main-Belt Asteroid Spectroscopic Survey: A Feature-Based Taxonomy, Icarus 158, 146-177
	smass1/a000022. [1]	Xu, S. (1994). CCD Photometry and Spectroscopy of Small Main-Belt Asteroids. Ph. D. Thesis, Massachusetts Institute of Technology / Xu, S., Binzel, R. P., Burbine, T. H., and Bus, S. J. (1995). Small Main-Belt Asteroid Spectroscopic Survey: Initial Results. Icarus 115, 1-35, 1995

Hyperlinks to download the data
 Figures drawn on the fly

.: Miriade :.

- Services d'éphémérides de position et d'éphémérides pour l'observation physique des SSO
- Des éphémérides planétaires de haute précision
 - accessibles simplement et directement
 - Inter-opérable (workflow)

Asteroid Kleopatra [Epoch 2003-12-28T17:47:26.60 ; Spin solution #1]

Physical ephemeris of the target (computed by EPROC-IMCCE)

Day	Month	Year	Hour	Minute	Second	SEPLong	SEPLat	SSPLong	SSPLat	NP	dPole	Mv	Phase	Ang-rad	Dg	Dh	PAQ	Q
			<i>h</i>	<i>min</i>	<i>s</i>	<i>deg</i>	<i>deg</i>	<i>deg</i>	<i>deg</i>	<i>deg</i>	<i>arcsec</i>		<i>deg</i>	<i>arcsec</i>	<i>AV</i>	<i>AV</i>	<i>deg</i>	<i>arcsec</i>
28	12	2003	17	47	26.6	219.22	10.53	225.68	-8.56	44.97	0.02	12.05	20.144	0.073462	0.271117E+01	2.240	63.83	0.002
29	12	2003	17	47	26.6	55.18	10.14	61.54	-8.83	44.98	0.02	12.05	20.001	0.073262	0.271854E+01	2.238	63.66	0.002
30	12	2003	17	47	26.6	251.14	9.74	257.40	-9.11	44.99	0.02	12.05	19.857	0.073066	0.272584E+01	2.236	63.48	0.002
31	12	2003	17	47	26.6	87.10	9.35	93.26	-9.38	45.00	0.02	12.05	19.711	0.072873	0.273308E+01	2.234	63.31	0.002
1	1	2004	17	47	26.6	283.06	8.95	289.12	-9.66	45.01	0.02	12.05	19.564	0.072682	0.274025E+01	2.232	63.14	0.002

PNG image(s) of the target (generated by MOVIS-IMCCE)

Snapshot

Image



[wsephemph_119752830146042200.png](#)

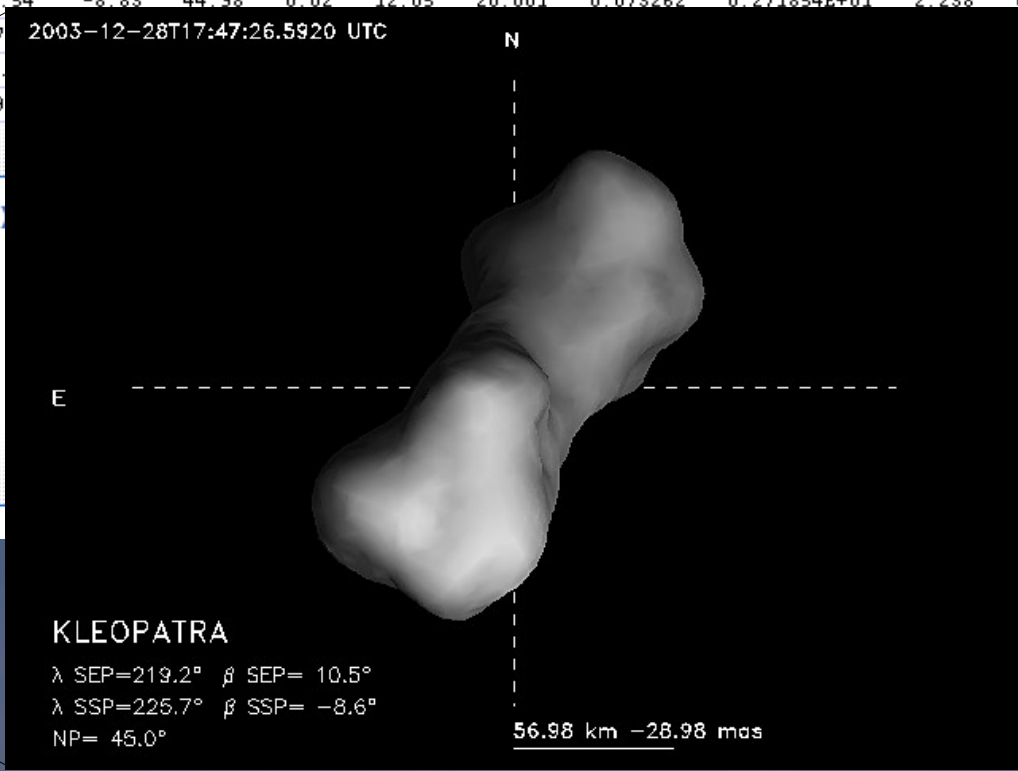
Asteroid Kleopatra [Epoch 2003-12-28T17:47:26.60 ; Spin solution #1]

Physical ephemeris of the target (computed by EPROC-IMCCE)

Day	Month	Year	Hour	Minute	Second	SEPLong	SEPLat	SSPLong	SSPLat	NP	dPole	Mv	Phase	Ang-rad	Dg	Dh	PAQ	Q
			h	min	s	deg	deg	deg	deg	deg	arcsec		deg	arcsec	AV	AV	deg	arcsec
28	12	2003	17	47	26.6	219.22	10.53	225.68	-8.56	44.97	0.02	12.05	20.144	0.073462	0.271117E+01	2.240	63.83	0.002
29	12	2003	17	47	26.6	55.18	10.14	61.54	-8.83	44.98	0.02	12.05	20.001	0.073262	0.271854E+01	2.238	63.66	0.002
30	12	2003	17	47	26.6	251.14	9.74	257.00	-8.83	44.98	0.02	12.05	20.001	0.073262	0.271854E+01	2.238	63.48	0.002
31	12	2003	17	47	26.6	87.10	9.35	93.00	-8.83	44.98	0.02	12.05	20.001	0.073262	0.271854E+01	2.238	63.31	0.002
1	1	2004	17	47	26.6	283.06	8.95	289.00	-8.83	44.98	0.02	12.05	20.001	0.073262	0.271854E+01	2.238	63.14	0.002

PNG image(s) of the target (generated by MOVIS-IMCCE)

Snapshot	Image
	wsephemph_119752830146042200.png



Asteroid Kleopatra [Epoch 2003-12-28T17:47:26.60 ; Spin solution #1]

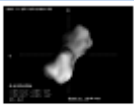
Physical ephemeris of the target (computed by EPROC-IMCCE)

Day	Month	Year	Hour	Minute	Second	SEPLong	SEPLat	SSPLong	SSPLat	NP	dPole	Mv	Phase	Ang-rad	Dg	Dh	PAQ	Q
			h	min	s	deg	deg	deg	deg	deg	arcsec		deg	arcsec	AV	AV	deg	arcsec
28	12	2003	17	47	26.6	219.22	10.53	225.68	-8.56	44.97	0.02	12.05	20.144	0.073462	0.271117E+01	2.240	63.83	0.002
29	12	2003	17	47	26.6	55.18	10.14	61.54	-8.83	44.98	0.02	12.05	20.001	0.073262	0.271854E+01	2.238	63.66	0.002
30	12	2003	17	47	26.6	251.14	9.74	257.00	-8.83	44.98	0.02	12.05	20.001	0.073262	0.271854E+01	2.238	63.48	0.002
31	12	2003	17	47	26.6	87.10	9.35	93.00	-8.83	44.98	0.02	12.05	20.001	0.073262	0.271854E+01	2.238	63.48	0.002
1	1	2004	17	47	26.6	283.06	8.95	289.00	-8.83	44.98	0.02	12.05	20.001	0.073262	0.271854E+01	2.238	63.48	0.002

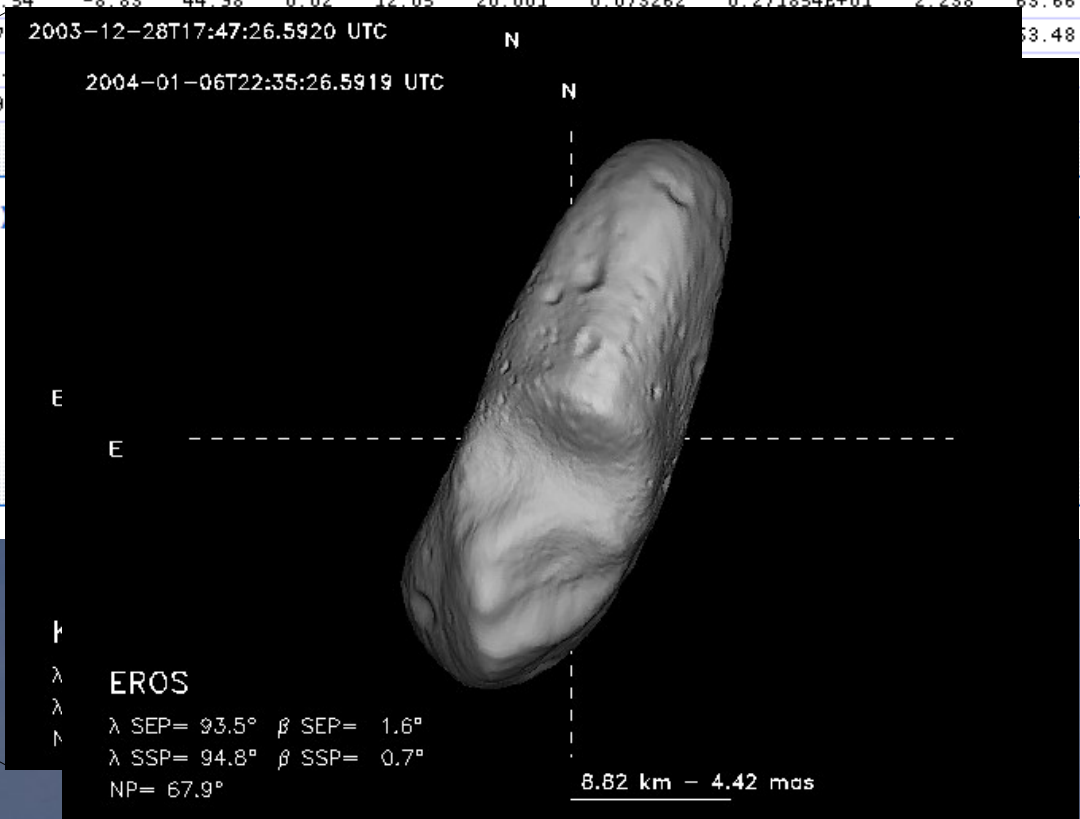
PNG image(s) of the target (generated by MOVIS-IMCCE)

Snapshot

Image



[wsephemph_119752830146042200.png](#)



:: ssoTEP ::

- Diffusion des phénomènes astronomiques :
 - STAP / SEAP => structuration de l'information
 - VOEvent => réseaux de télescopes robotiques
 - TimeLine / GoogleSky => visualisation graphique des événements

SsoTEP in GoogleSky

Google Earth
 Fichier Modifier Affichage Outils Ajouter Aide

Rechercher
 Rechercher dans le ciel Recherche de lieu
 ex.: Lion, Galaxie d'Andromède, NGC 3628

Lieux
 Mes lieux préférés
 ssoTEP-ex.kml
 ssoTEP
 eSTAR
 Visite touristique
 Lieux temporaires

Infos pratiques
 Vue : Infos de base

Base de données primaire
 Constellations
 Astronomie amateur
 Hubble Showcase
 La Lune
 Les planètes
 Guide des galaxies
 La vie d'une étoile

Pointeur Déc 23°35'25.83" RA 0h25m45.26s Mise au point 100%

©2007 Google™

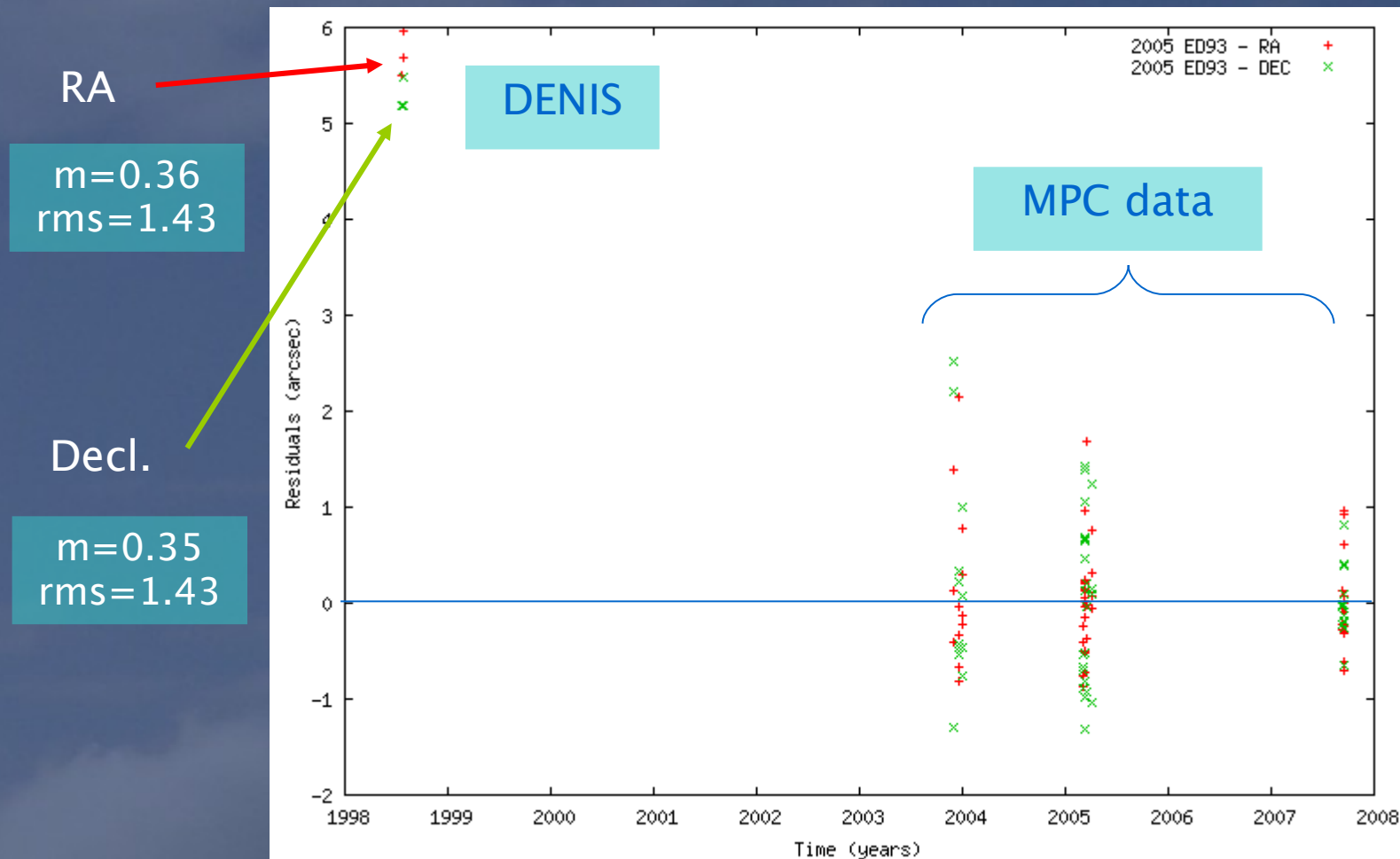
:: VO-NOE ::

- Analyse des observations astrométriques
- Ajustement / détermination d'orbites planétaires
 - Astéroïdes
 - Satellites naturels
- Mise en oeuvre en workflow

:: Astroid ::

- Fouille d'archives astronomiques
- Recherche et identification des SSO
 - 2007: DENIS => ~20000 positions de ~15000 astéroïdes dont ~300 NEAs
 - 2008: ESO-R, SRCJ, EROS, ...
- Positions astrométriques de pré-découvertes des SSO
- Impact fort sur la détermination des orbites des NEAs

2005 ED93 – Fitted on MPC obs.



2005 ED93 Fitted on all obs.

