

**New Definitions  
for  
Solar System Bodies**

# International Astronomical Union

XXVIth General Assembly

Prague 14<sup>th</sup> – 25<sup>th</sup>

August 2006

Resolutions 5 and 6

# Resolution 5 – Definitions

- Planet
- Dwarf Planet
- Small Solar System Bodies

# Planet

A celestial body that;

(a) is in orbit around the Sun,

(b) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape, and

(c) has cleared the neighbourhood around its orbit.

# Dwarf Planet

A celestial body that

- (a) is in orbit around the Sun,
- (b) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape
- (c) has not cleared the neighbourhood around its orbit, and
- (d) is not a satellite.

# Small Solar System Bodies

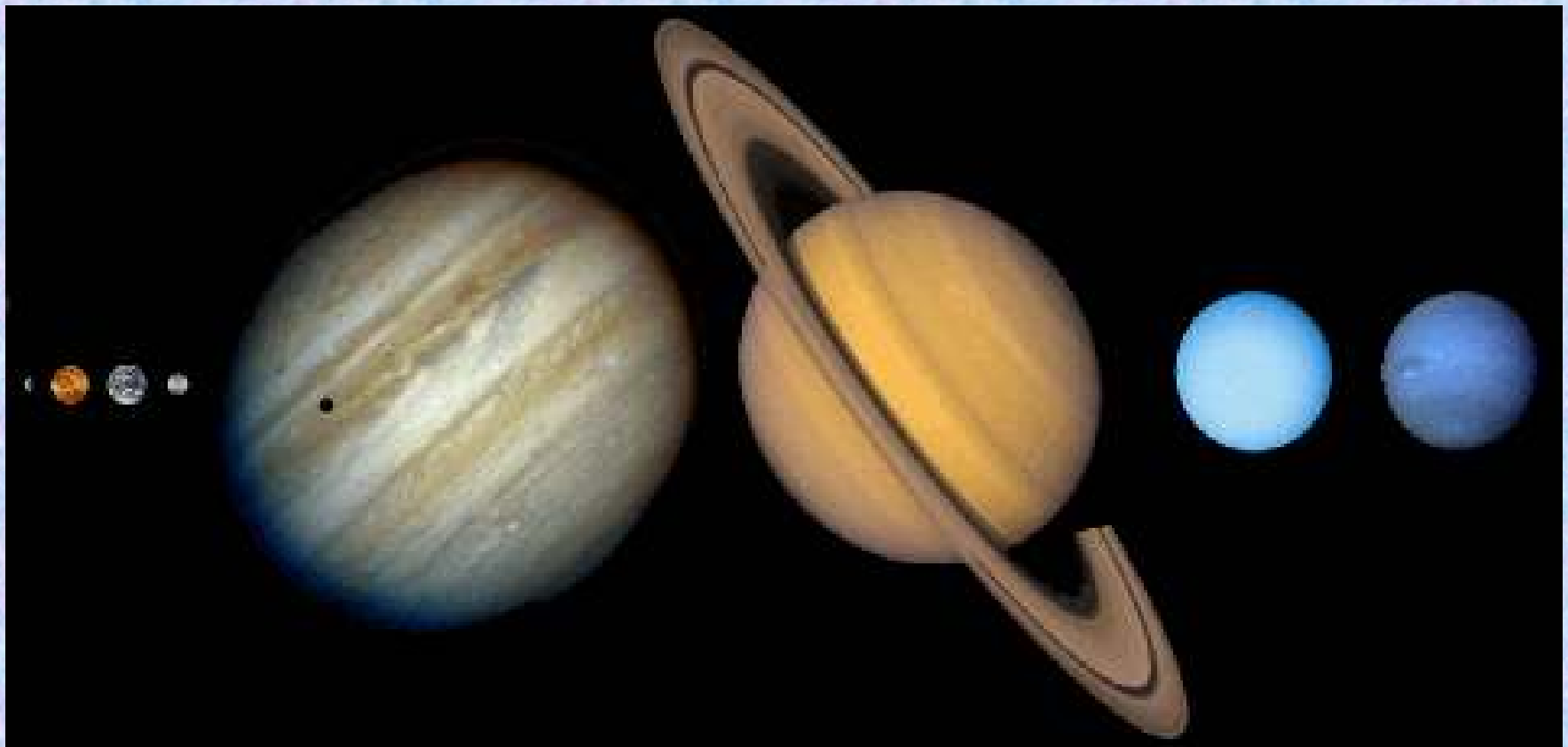
All other objects, except satellites, orbiting the Sun shall be referred to collectively as "Small Solar System Bodies".

# Resolution 6 - Pluto

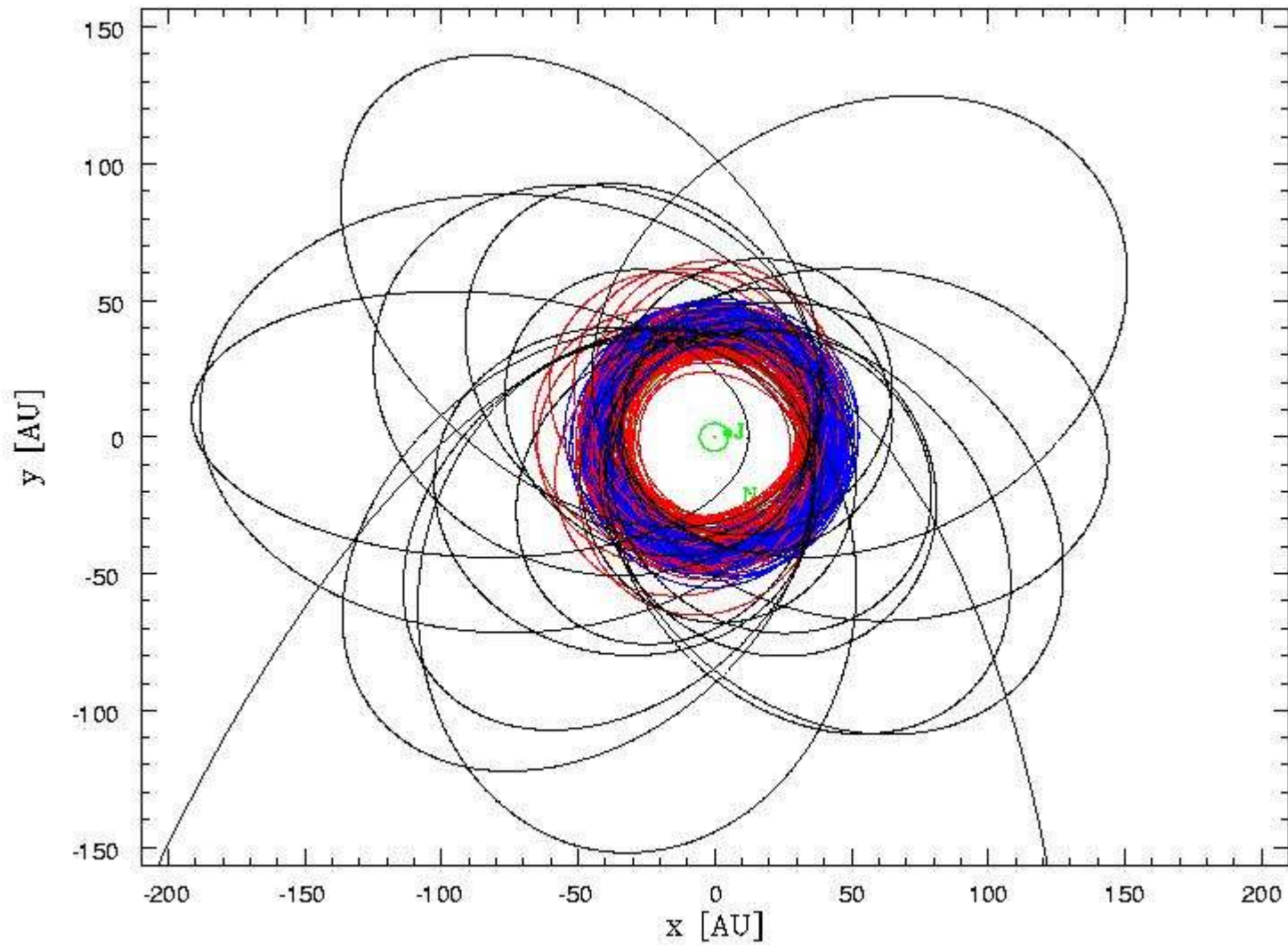
Pluto is a "dwarf planet" by the above (Resolution 5) definition and is recognized as the prototype of a new category of Trans-Neptunian Object

An IAU process will be established to select a name for this category.

# The Planets



Plutinos – red, Classical EKBO's, SDO's – Black



# Dwarf Planets

<b>Name</b>	<b>Number</b>	<b>Group</b>	<b>Diameter (km)</b>
<b>Ceres</b>	1	Main Belt	942
<b>Pluto</b>	134340	Edgeworth-Kuiper Belt	2306
<b>Eris</b>	136199 (2003 UB313)	Scattered Disk	2400

# Possible Dwarf Planets - 1

Name	Number	Group	Diameter (km)
	136472/2005 FY9	EKB	1800
<b>Orcus</b>	90482	EKB (Plutino)	1360
<b>Sedna</b>	90377	SD	1490
	136108/2003 EL61	EKB	1500
<b>Quaoar</b>	50000	EKB	1168
<b>Charon</b>		Satellite of Pluto	1207
	2002 TC302	EKB	$\leq 1200$
<b>Varuna</b>	20000	EKB	936

# Possible Dwarf Planets - 2

Name	Number	Group	Diameter (km)
	2002 UX25	EKB	910
	2002 TX300	EKB	<900
<b>Ixion</b>	28978	EKB (Plutino)	<822
	2002 AW197	EKB	700
<b>Pallas</b>	2	Main Belt	266
<b>Vesta</b>	4	Main Belt	265
<b>Hygiea</b>	10	Main Belt	204

## Largest known Kuiper Belt objects



"Xena"  
(2003 UB313)



2003 EL61



Pluto



Sedna



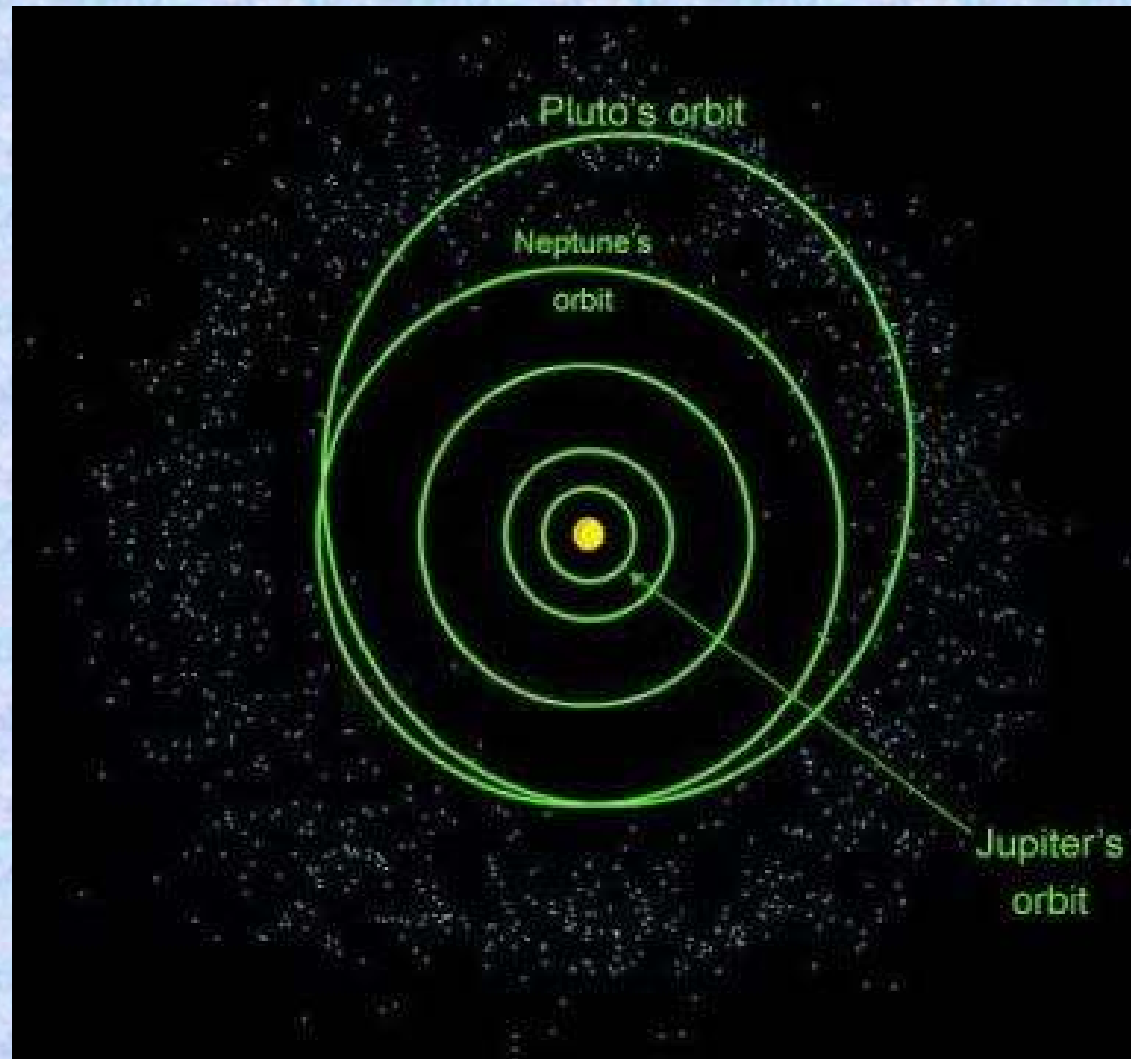
2005 FY9



Quaoar



# Pluto and Plutinos



# Plutinos

Object	a [AU]	e	i [deg]	q [AU]	Q [AU]
1996 TP66	39.71	0.34	5.7	26.38	53.05
1993 SZ4	39.82	0.26	4.7	29.57	50.07
1996 RR20	40.05	0.19	5.3	32.55	47.55
1993 SB	39.55	0.32	1.9	26.91	52.18
1993 SC	39.88	0.19	5.2	32.24	47.52
1993 RO	39.61	0.20	3.7	31.48	47.73
1993 RP	39.33	0.11	2.8	35.00	43.66
1994 JR1	39.43	0.12	3.8	34.76	44.11
1994 TB	39.84	0.32	12.1	27.05	52.63
1995 HM5	39.37	0.25	4.8	29.48	49.26
1997 QJ4	39.65	0.22	16.5	30.83	48.47
1995 KK1	39.48	0.19	9.3	38.67	46.98
1995 QZ9	39.77	0.15	19.5	33.70	45.85
1995 YY3	39.39	0.22	0.4	30.70	48.08
1996 TQ66	39.65	0.13	14.6	34.59	44.71
Pluto	39.61	0.25	17.17	29.58	49.30

# ARPS ?

Small Solar System Bodies (asteroids),  
Dwarf Planets and Pluto-like Objects  
Section – SSSB(A)DPPLoS