What’s the deal with Pluto?
Exoplanets
History
The Future
Things go South in 2006

IAU strips Pluto of its status as a “planet” — it is now a DWARF PLANET

The solar system has 8 planets
2006 Word of the Year

plutoed (PLUE-toed)

to demote or devalue something, as happened to the former planet Pluto...
Pandemonium!
It's okay Pluto
I'm not a planet either!

Pluto
You're a plane!
States Rebel...

- **NEW MEXICO**
  - Pluto will always be considered a planet while in New Mexican skies
  - March 13, 2007 was Pluto Planet Day

- **ILLINOIS**
  - Pluto was "unfairly downgraded to a 'dwarf' planet" by the IAU.
  - Bill SR0046
  - As Pluto passes overhead through Illinois' night skies, that it be reestablished with full planetary status
  - March 13, 2009 be declared "Pluto Day" in the State of Illinois in honor of the date its discovery was announced in 1930.
SEE ANOTHER WORLD IN SKY

LOCATE NEW PLANET OF SOLAR SYSTEM

14 March 1930
Terrestrial

Jovian

Third Zone
We knew it was tiny.
It’s orbit is quite different!
The mass wasn’t nailed down until the discovery of Charon (1978).
Questioning Pluto...

Pluto’s orbit is a bit weird

"Pluto is mostly ice. If you slid Pluto to where Earth is right now, heat from the Sun would evaporate that ice, and it would grow a tail. Now, that's no kind of behavior for a planet." ~ Neil deGrasse Tyson

Pluto’s composition is not like that of a terrestrial world
The Argument

Pluto is more like the iceballs in the Kuiper Belt than anything else in the inner solar system, thus it is not a planet.

Mike Brown
Caltech

Neil deGrasse Tyson
Hayden Planetarium

Alan Stern
New Horizons

TAXONOMY

Shane & Kate
Imagine I have discovered an awesome new Cosmic Substance called CANDY.
One word names

Two word names

21x2 to 1083x826
Super Chewy

Not too chewy

Super Chewy
To Be A Planet...

(1) You must **orbit around the Sun**

(2) Gravity must make you “**round**”

(3) You must have “**cleared your orbit**”
So what should we think of all of this?

Why do we care what we call or don’t call a planet (other than impuning Pluto’s honor)?
Think About Jupiter…

Is Jupiter a planet?

If Jupiter were where Pluto is, it would not have had time to clear its orbit! *It would fail the IAU definition!*
“Clearing an orbit” is a fuzzy definition
51 Pegasi b (Bellerophon)

Hot Jupiters
The IAU definition completely ignores exoplanets (of which there are 1186 known planets, and 5973 candidates)
New Horizons sails by Pluto
14 July 2015
New Horizons: We can see Pluto (& Charon)!

First picture of Pluto from New Horizons
Science is a constantly evolving process of trying to understand what Nature is telling us.

We will revisit this question again.

But in the meantime, Pluto beckons...
Reading & Other Resources

Mike Brown

How I Killed Pluto and Why It Had It Coming
Mike Brown

Alan Boyle

The Case for Pluto: How a Little Planet Made a Big Difference
Alan Boyle

Neil deGrasse Tyson

The Pluto Files: The Rise and Fall of America's Favorite Planet
Neil deGrasse Tyson

Mike Brown public lecture at Keck Institute:
http://tinyurl.com/mikeBrownKeck

My TEDx Talk:
http://tinyurl.com/shanePluto