Glen Fountain

Overview of the Mission
New Horizons Launch Options

• 2006 Planned Baseline
  - Launch date: Jan 11- Feb 14, 2006
  - Launch period: 35 days
  - Max $C_3$: 164 km$^2$/s$^2$
  - S/C launch mass: 481 kg
  - Pluto arrival: 2015-2020

• 2007 Planned Backup
  - Launch date: Feb 2-15, 2007
  - Launch period: 14 days
  - Max $C_3$: 166.2 km$^2$/s$^2$
  - S/C launch mass: 461 kg
  - Pluto arrival: 2019-2020
Launch Sequence & Trajectory (Jan 11)

- **CCB RD-180 and SRB Ignition**
- **SRB Burnout and Jettison, CCB Solo Phase**
- **CCB Burnout and Centaur Separation**
- **PLF Jettison, Continue CCB Solo Phase**
- **Atlas V 551**

**Launch**
Jan 11, 2006
3:07 PM

- **Sun Terminator**
- **To Jupiter**
- **Injection Burn (Stage II + Star 48B)**
- **SC Separation**
- **SC Transmitter On AOS at Canberra**

**Time ticks every 5 min**

**Launch Sequence & Trajectory**
- **Launch**
- **Sun Terminator**
- **To Jupiter**
- **Injection Burn (Stage II + Star 48B)**
- **SC Separation**
- **SC Transmitter On AOS at Canberra**

**Launch Sequence & Trajectory (Jan 11)**
Pluto Encounter
July 2015
July 2016
July 2017

Onward to Kuiper Belt Object(s)

Jupiter Gravity Assist Trajectory

Neptune

Saturn

Uranus

Launch
Jan 11 – Feb 2, 2006

Jupiter Gravity Assist Flyby
Feb - Mar 2007

Planetary position at Pluto encounter in July 2015
Baseline Spacecraft

Instruments
(View Directions)
Spacecraft Components

Legend

Alice SOC (+Y)
REX (+Y)

LORRI (-X)
Alice Airglow (-X)
Ralph (-X)

TWTA
Thrusters
External Shunts
Sun Sensors

PEPSSI (~+Y Fan)
SWAP (+Y Fan)

SDC (-Y)

Star Trackers and Radiator

Thrusters

1 meter
• S/C trajectory time ticks: 10 min
• Charon orbit time ticks: 12 hr
• Occultation: center time
• Position and lighting at Pluto C/A
• Distance relative to body center