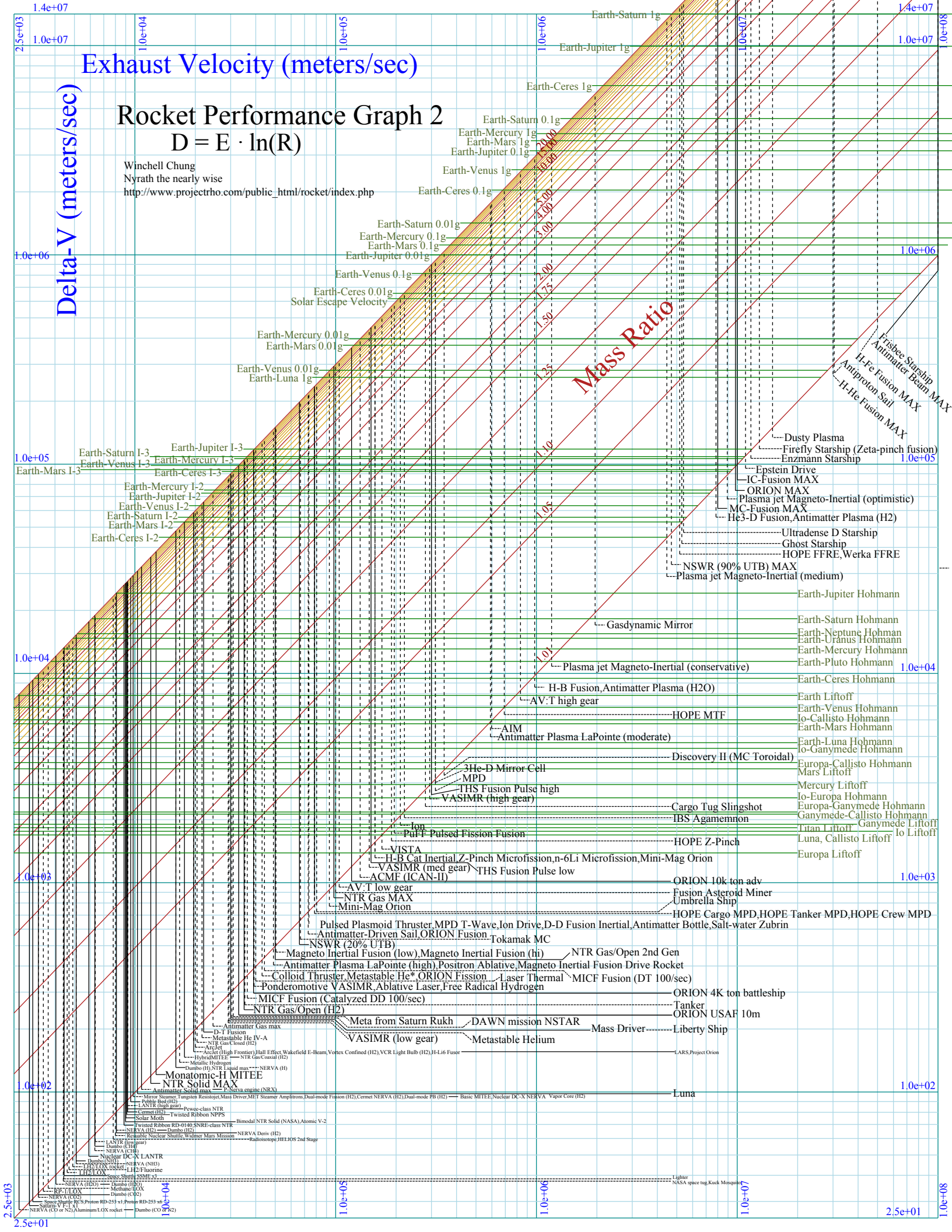
Rocket Performance Graph 2
D = E · ln(R)
Winchell Chung
Nyrath the nearly wise
http://www.projectrho.com/public_html/rocket/index.php
Exhaust Velocity (meters/sec)
Delta-V (meters/sec)
Mass Ratio
Earth-Saturn 1g
Earth-Jupiter 1g
Earth-Ceres 1g
Earth-Saturn 0.1g
Earth-Mercury 1g
Earth-Mars 1g
Earth-Jupiter 0.1g
Earth-Venus 1g
Earth-Ceres 0.1g
Earth-Saturn 0.01g
Earth-Mercury 0.1g
Earth-Mars 0.1g
Earth-Jupiter 0.01g
Earth-Venus 0.1g
Earth-Ceres 0.01g
Solar Escape Velocity
Earth-Mercury 0.01g
Earth-Mars 0.01g
Earth-Venus 0.01g
Earth-Luna 1g
Earth-Saturn I-3
Earth-Jupiter I-3
Earth-Venus I-3
Earth-Mercury I-3
Earth-Mars I-3
Earth-Ceres I-3
Earth-Mercury I-2
Earth-Jupiter I-2
Earth-Venus I-2
Earth-Saturn I-2
Earth-Mars I-2
Earth-Ceres I-2
Frisbee Starship
Antimatter Beam MAX
H-Fe Fusion MAX
Antiproton Sail
H-He Fusion MAX
Dusty Plasma
Firefly Starship (Zeta-pinch fusion)
Enzmann Starship
Epstein Drive
IC-Fusion MAX
ORION MAX
Plasma jet Magneto-Inertial (optimistic)
MC-Fusion MAX
He3-D Fusion,Antimatter Plasma (H2)
Ultradense D Starship
Ghost Starship
HOPE FFRE,Werka FFRE
NSWR (90% UTB) MAX
Plasma jet Magneto-Inertial (medium)
Earth-Jupiter Hohmann
Gasdynamic Mirror
Earth-Saturn Hohmann
Earth-Neptune Hohmann
Earth-Uranus Hohmann
Earth-Mercury Hohmann
Earth-Pluto Hohmann
Plasma jet Magneto-Inertial (conservative)
Earth-Ceres Hohmann
H-B Fusion,Antimatter Plasma (H2O)
Earth Liftoff
AV:T high gear
Earth-Venus Hohmann
HOPE MTF
Io-Callisto Hohmann
Earth-Mars Hohmann
AIM
Antimatter Plasma LaPointe (moderate)
Earth-Luna Hohmann
Io-Ganymede Hohmann
Discovery II (MC Toroidal)
Europa-Callisto Hohmann
3He-D Mirror Cell
Mars Liftoff
MPD
Mercury Liftoff
THS Fusion Pulse high
Io-Europa Hohmann
VASIMR (high gear)
Europa-Ganymede Hohmann
Cargo Tug Slingshot
Ganymede-Callisto Hohmann
IBS Agamemnon
Ganymede Liftoff
Ion
Titan Liftoff
PuFF Pulsed Fission Fusion
Io Liftoff
HOPE Z-Pinch
Luna, Callisto Liftoff
VISTA
Europa Liftoff
H-B Cat Inertial,Z-Pinch Microfission,n-6Li Microfission,Mini-Mag Orion
VASIMR (med gear)
THS Fusion Pulse low
ACMF (ICAN-II)
ORION 10k ton adv
AV:T low gear
Fusion Asteroid Miner
NTR Gas MAX
Umbrella Ship
Mini-Mag Orion
HOPE Cargo MPD,HOPE Tanker MPD,HOPE Crew MPD
Pulsed Plasmoid Thruster,MPD T-Wave,Ion Drive,D-D Fusion Inertial,Antimatter Bottle,Salt-water Zubrin
Antimatter-Driven Sail,ORION Fusion
Tokamak MC
NSWR (20% UTB)
Magneto Inertial Fusion (low),Magneto Inertial Fusion (hi)
NTR Gas/Open 2nd Gen
Antimatter Plasma LaPointe (high),Positron Ablative,Magneto Inertial Fusion Drive Rocket
Colloid Thruster,Metastable He*,ORION Fission
Laser Thermal
MICF Fusion (DT 100/sec)
Ponderomotive VASIMR,Ablative Laser,Free Radical Hydrogen
ORION 4K ton battleship
MICF Fusion (Catalyzed DD 100/sec)
Tanker
NTR Gas/Open (H2)
ORION USAF 10m
Meta from Saturn Rukh
DAWN mission NSTAR
Mass Driver
Liberty Ship
Antimatter Gas max
D-T Fusion
Metastable He IV-A
VASIMR (low gear)
Metastable Helium
NTR Gas/Closed (H2)
ArcJet
ArcJet (High Frontier),Hall Effect,Wakefield E-Beam,Vortex Confined (H2),VCR Light Bulb (H2),H-Li6 Fusor
LARS,Project Orion
HybridMITEE
NTR Gas/Coaxial (H2)
Metallic Hydrogen
Dumbo (H),NTR Liquid max
NERVA (H)
Monatomic-H MITEE
NTR Solid MAX
Antimatter Solid max
P-Nerva engine (NRX)
Luna
Mirror Steamer,Tungsten Resistojet,Mass Driver,MET Steamer Amplitrons,Dual-mode Fission (H2),Cermet NERVA (H2),Dual-mode PB (H2)
Basic MITEE,Nuclear DC-X NERVA Vapor Core (H2)
Pebble Bed (H2)
LANTR (high gear)
Pewee-class NTR
Cermet (H2)
Twisted Ribbon NPPS
Solar Moth
Twisted Ribbon RD-0140,SNRE-class NTR
Bimodal NTR Solid (NASA),Atomic V-2
NERVA (H2)
Dumbo (H2)
NERVA Deriv (H2)
Resuable Nuclear Shuttle,Widmer Mars Mission
Radioisotope,HELIOS 2nd Stage
LANTR (low gear)
Dumbo (CH4)
NERVA (CH4)
Nuclear DC-X LANTR
Dumbo (NH3)
LH2/LOX rocket
NERVA (NH3)
LH2/Fluorine
LH2/LOX
Space Shuttle SSME x3
Lighter
NASA space tug,Kuck Mosquito
NERVA (H2O)
Dumbo (H2O)
Methane/LOX
RP-1/LOX
Dumbo (CO2)
NERVA (CO2)
Space Shuttle RCS,Proton RD-253 x1,Proton RD-253 x6
Saturn-V F-1 x1
NERVA (CO or N2),Aluminum/LOX rocket
Dumbo (CO or N2)
1.4e+07
1.0e+07
1.0e+06
1.0e+05
1.0e+04
1.0e+03
1.0e+02
2.5e+03
2.5e+01
1.0e+08
1.0e+04
1.0e+05
1.0e+06
1.0e+07
2.5e+01
20.00
15.00
10.00
5.00
4.00
3.00
2.00
1.75
1.50
1.25
1.10
1.05
1.01