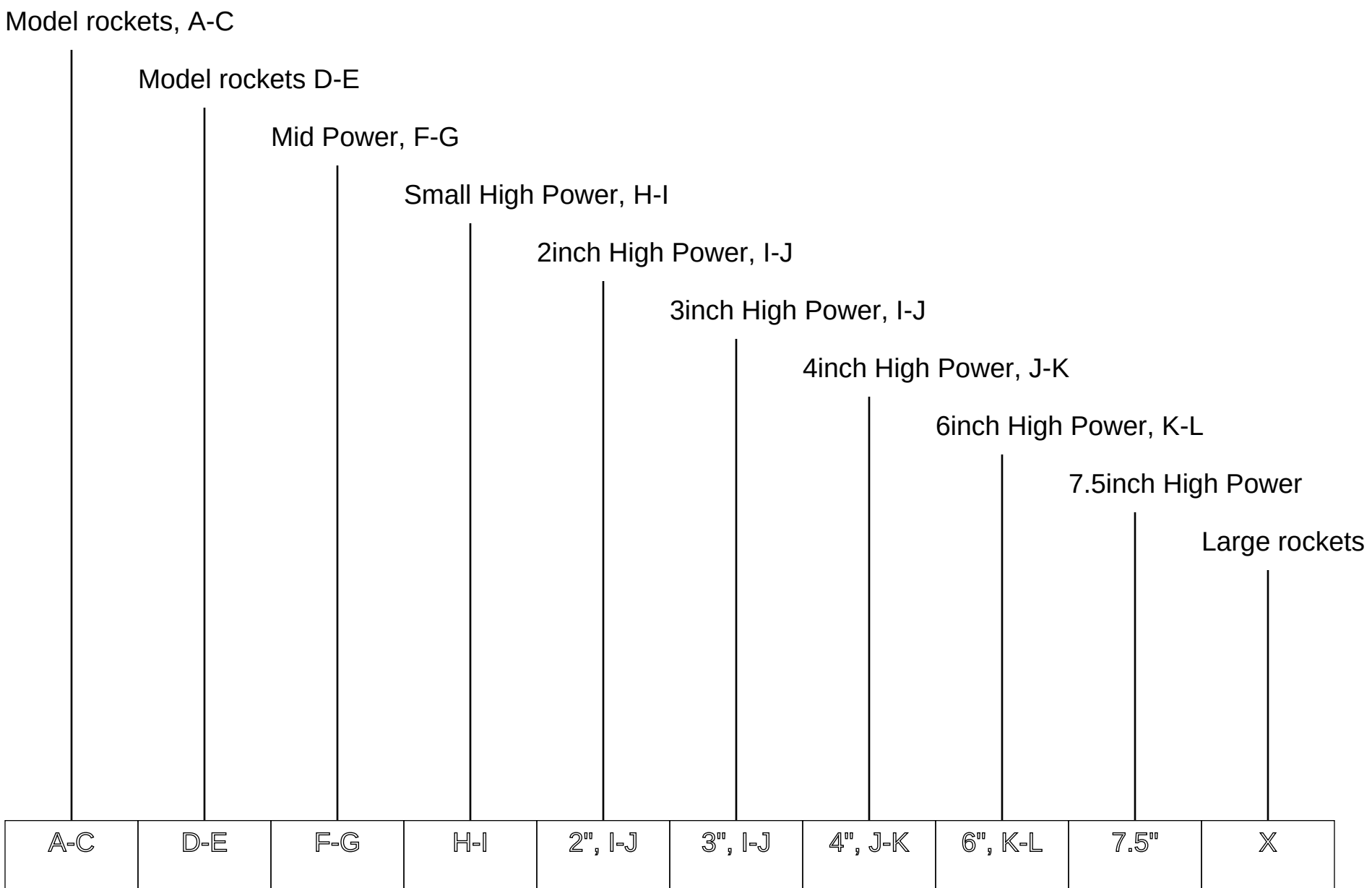
Rocket Trajectory Nomograms

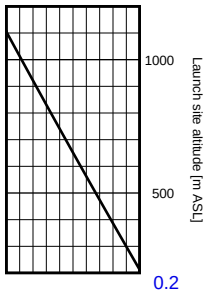

Model rockets, A-C
Model rockets D-E
Mid Power, F-G
Small High Power, H-I
2inch High Power, I-J
3inch High Power, I-J
4inch High Power, J-K
6inch High Power, K-L
7.5inch High Power
Large rockets
A-C
D-E
F-G
H-I
2", I-J
3", I-J
4", J-K
6", K-L
7.5"
X

Maurer

BC-80_SB

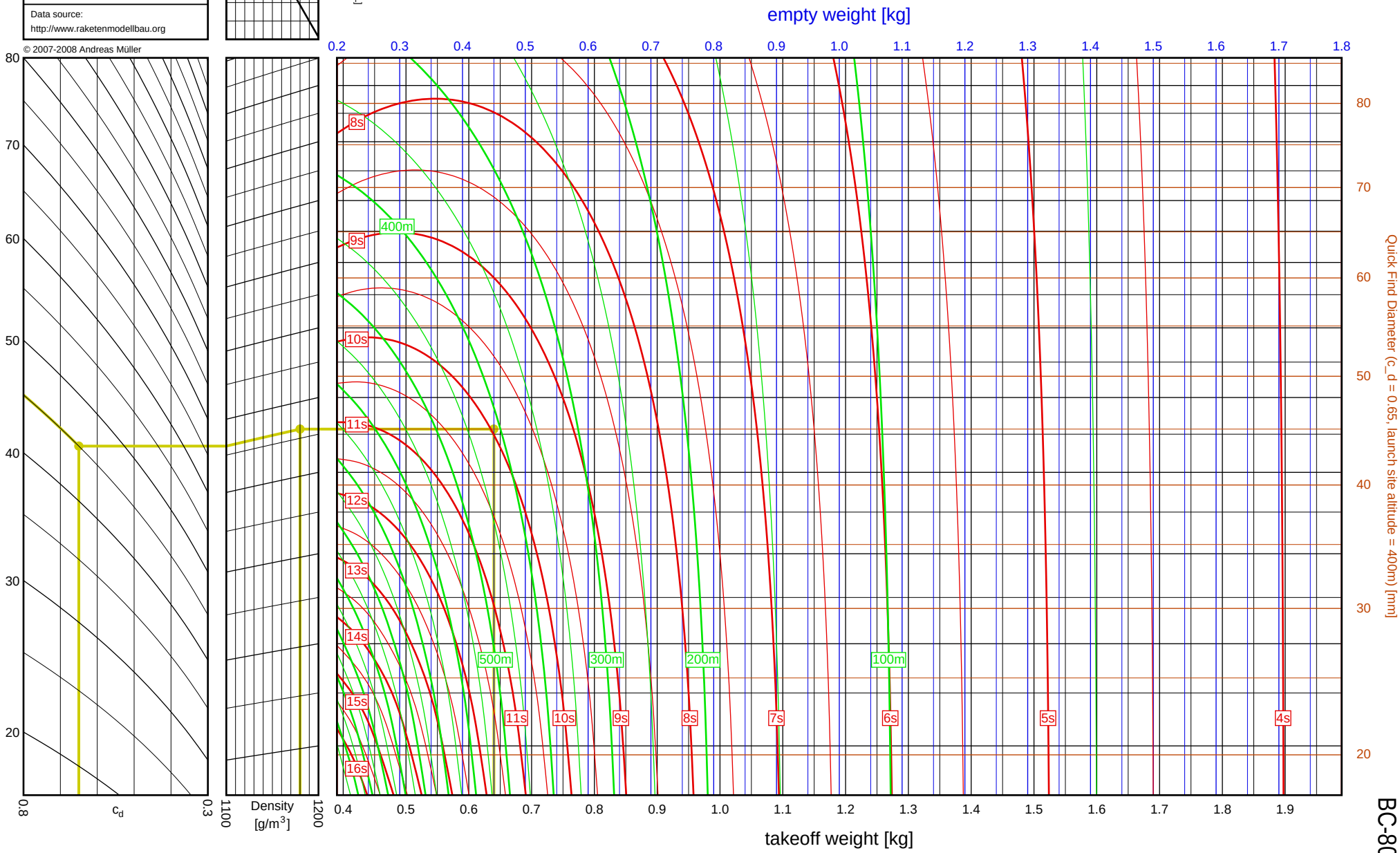
I_{tot}	=	73.5 Ns
F_{avg}	=	28.2 N
t_{burn}	=	2.60 s
d	=	38 mm

Data source:
http://www.raketenmodellbau.org



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Example: diameter = 45mm, drag = 0.65, density = 1180 g/m^3, weight = 0.640kg
Results: time to apogee: 10.0s, expected altitude: 410m

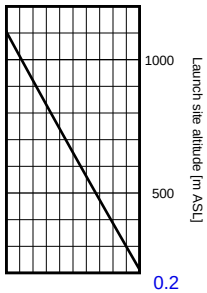


Maurer

BC-125"4

I_{tot}	=	174.4 Ns
F_{avg}	=	40.2 N
t_{burn}	=	4.34 s
d	=	38 mm

Data source:
http://www.raketenmodellbau.org



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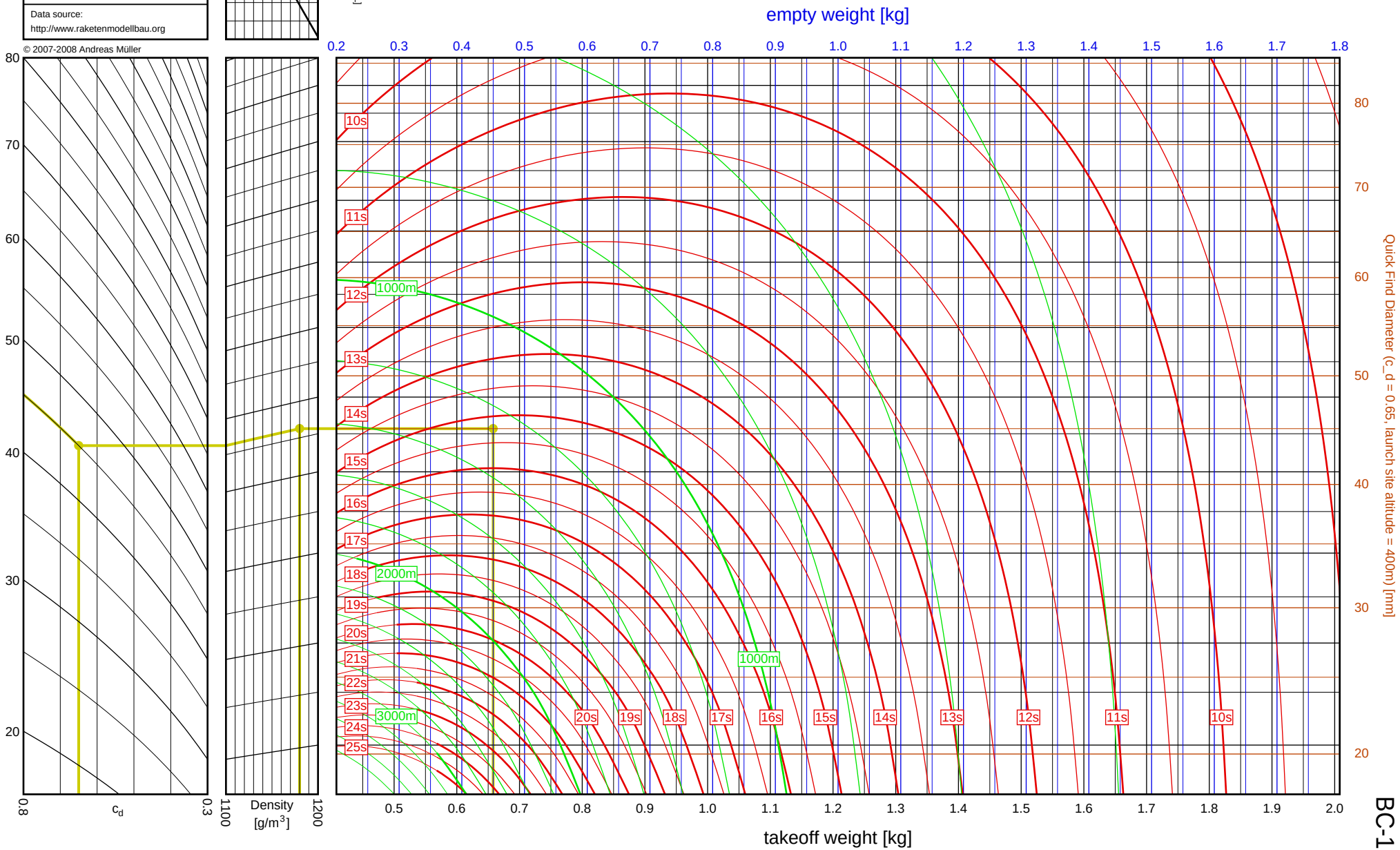
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Example: diameter = 45mm, drag = 0.65, density = 1180 g/m^3, weight = 0.658kg
Results: time to apogee: 15.2s, expected altitude: 1261m

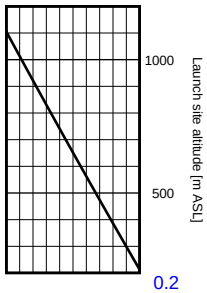


Maurer

BC-125"6

I_{tot}	=	177.9 Ns
F_{avg}	=	29.8 N
t_{burn}	=	5.97 s
d	=	38 mm

Data source:
http://www.raketenmodellbau.org



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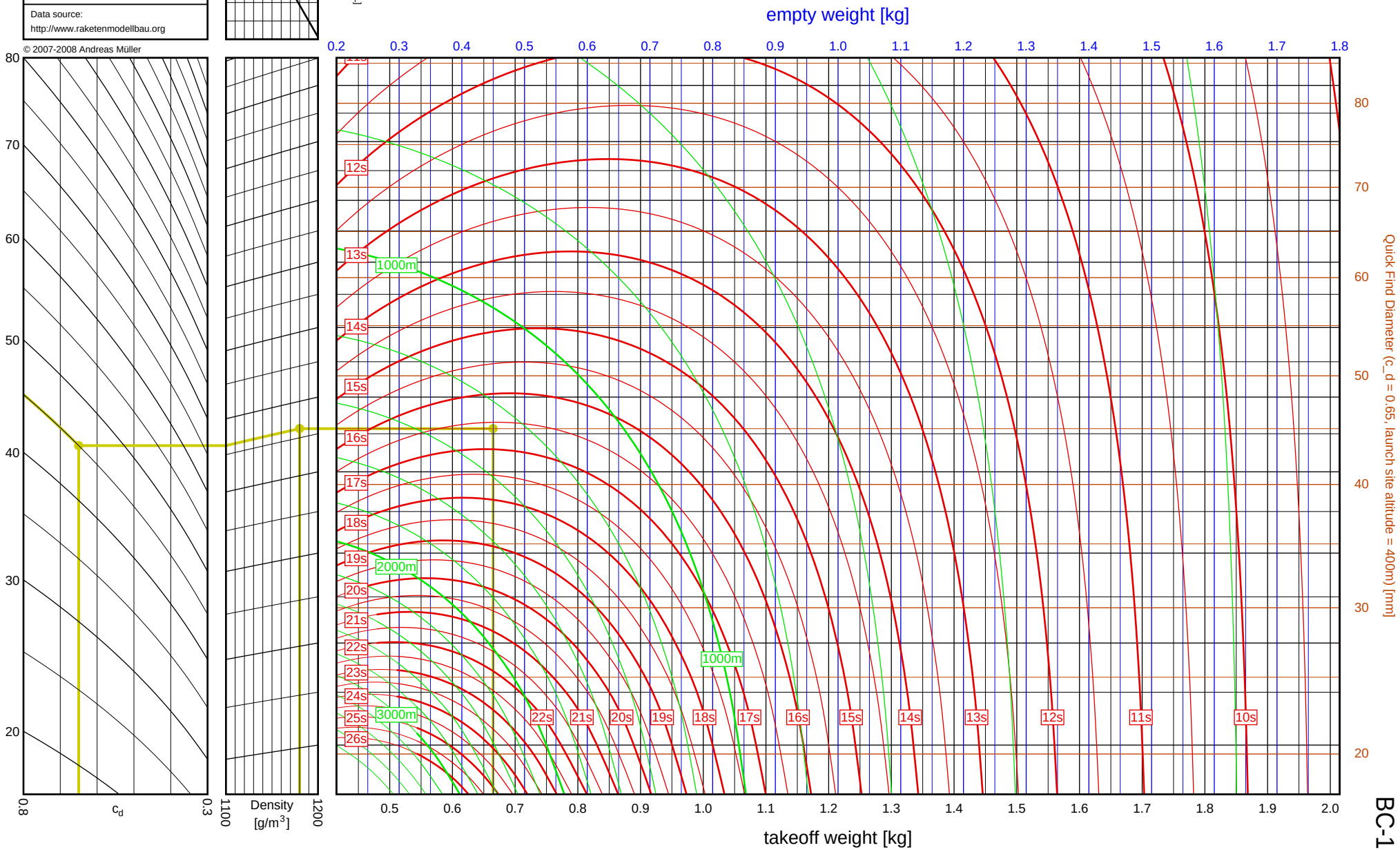
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Example: diameter = 45mm, drag = 0.65, density = 1180 g/m^3, weight = 0.665kg
Results: time to apogee: 16.6s, expected altitude: 1269m

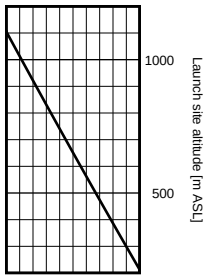


Maurer

BC-125"1

I_{tot}	=	157.8 Ns
F_{avg}	=	143.3 N
t_{burn}	=	1.10 s
d	=	38 mm

Data source:
http://www.raketenmodellbau.org



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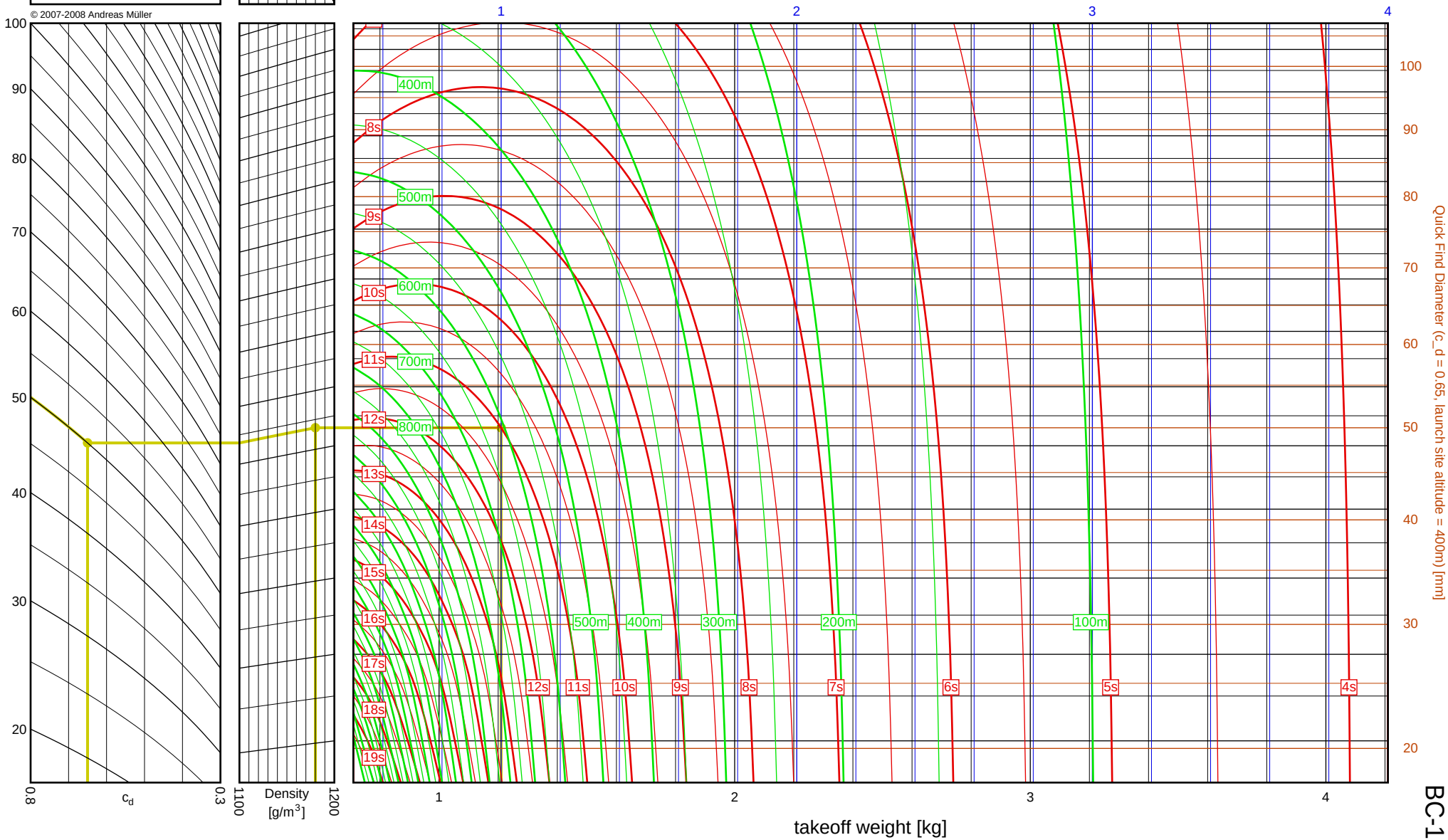
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Example: diameter = 50mm, drag = 0.65, density = 1180 g/m^3, weight = 1.210kg
Results: time to apogee: 11.0s, expected altitude: 607m

empty weight [kg]



takeoff weight [kg]

BC-125"1

BC-125"1

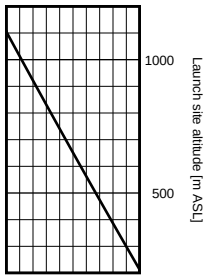
H-I

Maurer

BC-125_Alu

I_{tot}	=	161.2 Ns
F_{avg}	=	95.8 N
t_{burn}	=	1.68 s
d	=	38 mm

Data source:
http://www.raketenmodellbau.org



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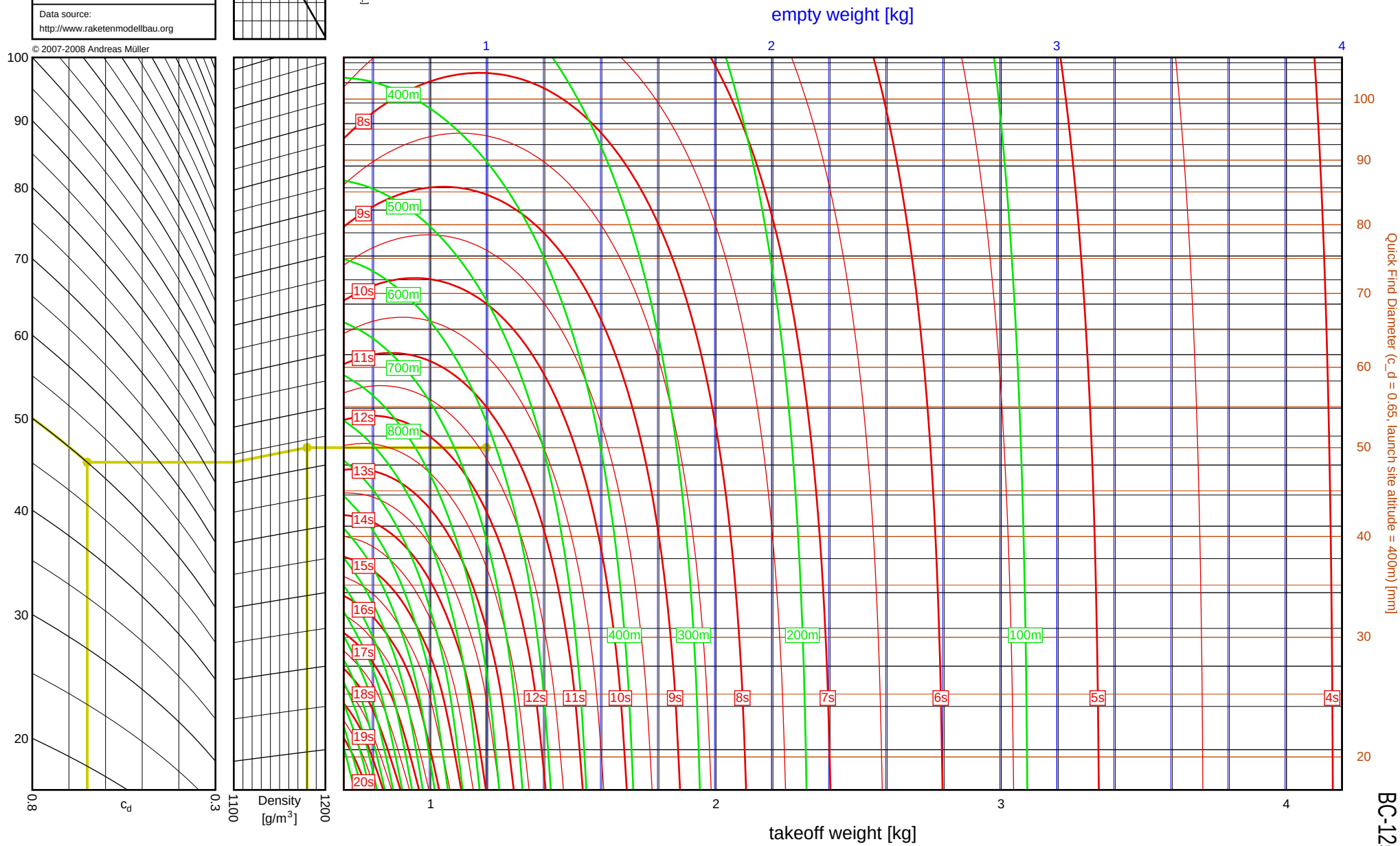
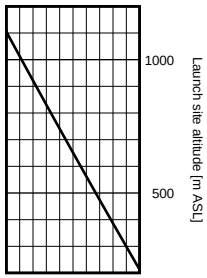
Example: diameter = 50mm, drag = 0.65, density = 1180 g/m^3, weight = 1.195kg
Results: time to apogee: 11.4s, expected altitude: 623m



Maurer
BC-360

I_{tot}	=	356.5 Ns
F_{avg}	=	210.6 N
t_{burn}	=	1.69 s
d	=	72 mm

Data source:
http://www.raketenmodellbau.org



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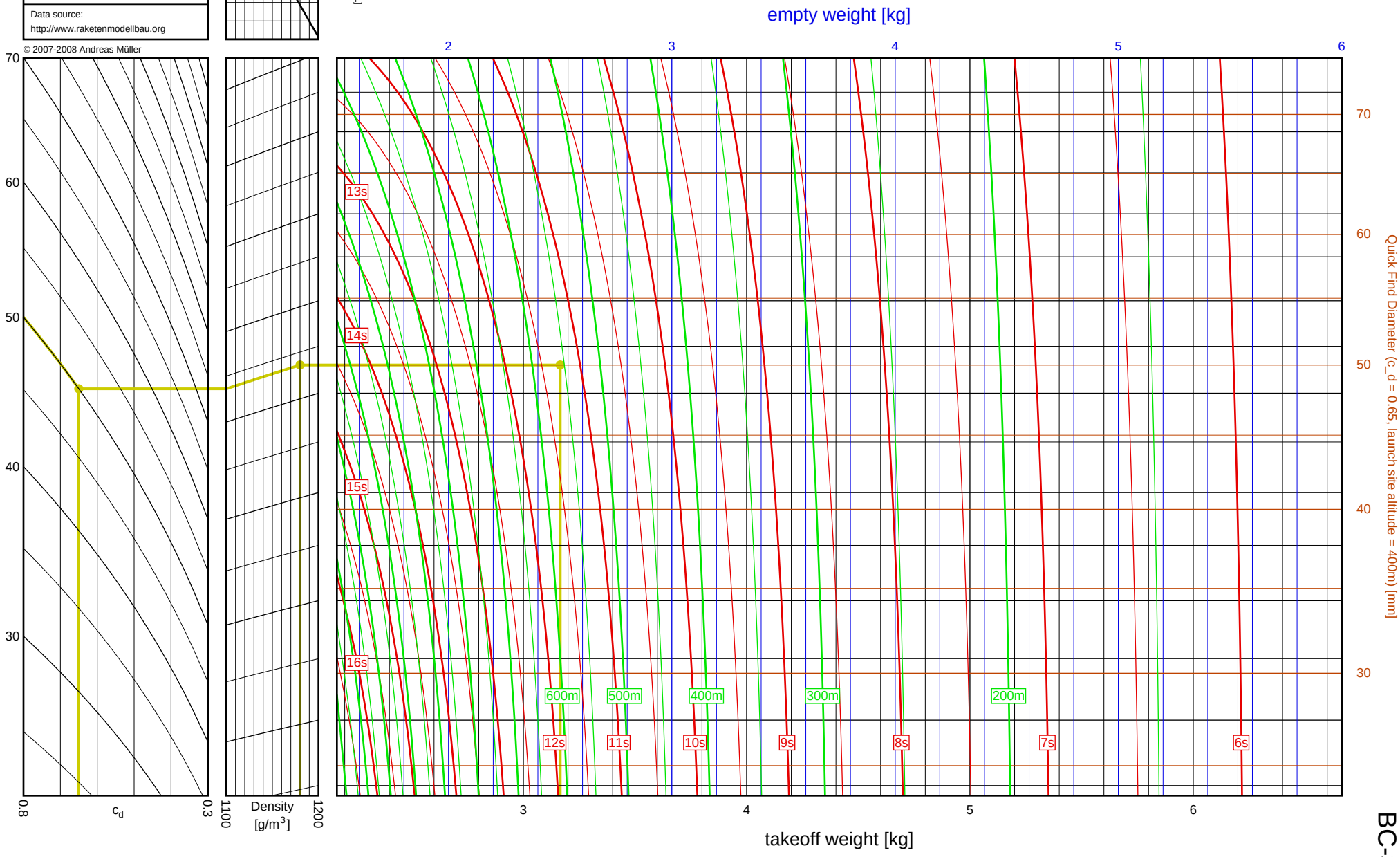
5. Read off expected time to apogee from red curves, altitude from green curves

Example: diameter = 50mm, drag = 0.65, density = 1180 g/m^3, weight = 3.165kg
Results: time to apogee: 11.3s, expected altitude: 556m



5-1

BC-360

BC-360

2", I-J

5

BC-125''1	4-1
BC-125''4	3-2
BC-125''6	3-3
BC-125_Alu	4-2
BC-360	5-1
BC-80_SB	3-1