Calculation & Plotting of the Hubble Constant (S&T Exercise)

Find the Wavelength Scale

λ_{span} (a-g) 112.8 nm

$D_{a\ to\ g}$ 75.5 mm

1.49404 nm/mm = W.S.

These are your measurements from the front page.

Find the Size Scale

angle 150 arcsec

$L_{150"}$ 24.6 **mm**

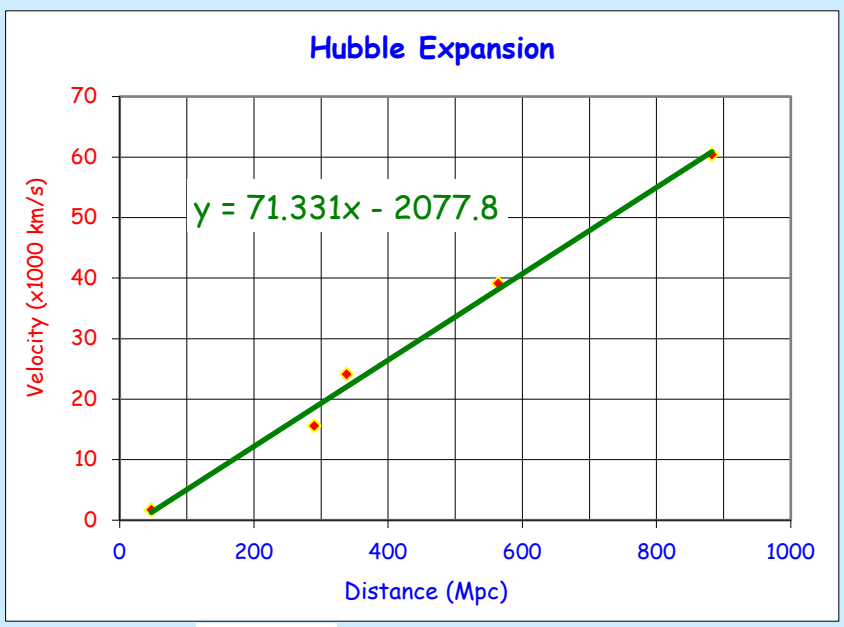
6.0976 asec/mm = S.S.

$\lambda_{0,\ KH}$ = 395.1 and $\lambda_{observed} = \lambda_{0,\ KH} + \Delta\lambda$

c = 3.00E+05 km/s

	Arrow	$\Delta\lambda$	$\lambda_{observed}$	**Speed**
	L	L*(λ/D)	L_0 + Shift	**(Shift/L_0)*c**
	mm	nm	nm	**km/s**
Virgo	1.5	2.2	397.3	**1701.6**
Ursa Major	13.75	20.5	415.6	**15598.4**
Corona Borealis	21.25	31.7	426.8	**24106.6**
Boötes	34.5	51.5	446.6	**39137.7**
Hydra	53.25	79.6	474.7	**60408.2**

	Galaxy Size					**Distance**
	Maj Axis	Min Axis	Average	Angle on sky		
	mm	mm	mm	arcsec	radians	**Mpc**
Virgo	25	18	21.5	131.10	6.36E-04	**47.2**
Ursa Major	6.5	0.5	3.5	21.34	1.03E-04	**289.9**
Corona Borealis	3	3	3	18.29	8.87E-05	**338.3**
Boötes	1.8	1.8	1.8	10.98	5.32E-05	**563.8**
Hydra	1.3	1	1.15	7.01	3.40E-05	**882.5**



H_0 from plot = 71.331 km/s/Mpc

Hubble Time = 13,735,963,326 years = **13.736 billion yr**