

progresses in order of the squares, 1,  $\frac{1}{4}$ th,  $\frac{1}{9}$ th,  $\frac{1}{16}$ th . . . He likewise treats of geometric progressions, as, for instance, 1,  $\frac{1}{2}$ ,  $\frac{1}{4}$ th,  $\frac{1}{8}$ th, . . . or 1,  $\frac{1}{3}$ d,  $\frac{1}{9}$ th,  $\frac{1}{27}$ th. . . . The gradations employed by yourself in your observations under the equator, during your travels in America, are arranged in a kind of arithmetical progression (*Recueil d'Observ. Astron.*, vol. i., p. lxxi., and Schumacher's *Astron. Nachr.*, No. 374). These scales, however, correspond less closely than the photometric scale of progression (by squares) with the vulgar scale. In the following table the 190 stars have been given from the *Outlines*, without reference to their declination, whether southern or northern, being arranged solely in accordance with their magnitudes."

*List of 190 stars from the first to the third magnitude, arranged according to the determinations of Sir John Herschel, giving the ordinary magnitudes with greater accuracy, and likewise the magnitudes in accordance with his proposed photometric classification :*

## STARS OF THE FIRST MAGNITUDE.

Star.	Magnitude.		Star.	Magnitude.	
	Vulg.	Phot.		Vulg.	Phot.
Sirius	0.08	0.49	$\alpha$ Orionis	1.0	1.43
$\eta$ Argûs (Var.)	—	—	$\alpha$ Eridani	1.09	1.50
Canopus	0.29	0.70	Aldebaran	1.1	1.5
$\alpha$ Centauri	0.59	1.00	$\beta$ Centauri	1.17	1.58
Arcturus	0.77	1.18	$\alpha$ Crucis	1.2	1.6
Rigel	0.82	1.23	Antares	1.2	1.6
Capella	1.0	1.4	$\alpha$ Aquilæ	1.28	1.69
$\alpha$ Lyræ	1.0	1.4	Spica	1.38	1.79
Procyon	1.0	1.4			

## STARS OF THE SECOND MAGNITUDE.

Star.	Magnitude.		Star.	Magnitude.	
	Vulg.	Phot.		Vulg.	Phot.
Fomalhaut	1.54	1.95	$\alpha$ Triang austr.	2.23	2.64
$\beta$ Crucis	1.57	1.98	$\epsilon$ Sagittarii	2.26	2.67
Pollux	1.6	2.0	$\beta$ Tauri	2.28	2.69
Regulus	1.6	2.0	Polaris	2.28	2.69
$\alpha$ Gruis	1.66	2.07	$\theta$ Scorpii	2.29	2.70
$\gamma$ Crucis	1.73	2.14	$\alpha$ Hydræ	2.30	2.71
$\epsilon$ Orionis	1.84	2.25	$\delta$ Canis	2.32	2.73
$\epsilon$ Canis	1.86	2.27	$\alpha$ Pavonis	2.33	2.74
$\lambda$ Scorpii	1.87	2.28	$\gamma$ Leonis	2.34	2.75
$\alpha$ Cygni	1.90	2.31	$\beta$ Gruis	2.36	2.77
Castor	1.94	2.35	$\alpha$ Arietis	2.40	2.81
$\epsilon$ Ursæ (Var.)	1.95	2.36	$\sigma$ Sagittarii	2.41	2.82
$\alpha$ Ursæ (Var.)	1.96	2.37	$\delta$ Argûs	2.42	2.83
$\zeta$ Orionis	2.01	2.42	$\zeta$ Ursæ	2.43	2.84
$\beta$ Argûs	2.03	2.44	$\beta$ Andromedæ	2.45	2.86
$\alpha$ Persei	2.07	2.48	$\beta$ Ceti	2.46	2.87
$\gamma$ Argûs	2.08	2.49	$\lambda$ Argûs	2.46	2.87
$\epsilon$ Argûs	2.18	2.59	$\beta$ Aurigæ	2.48	2.89
$\eta$ Ursæ (Var.)	2.18	2.59	$\gamma$ Andromedæ	2.50	2.91
$\gamma$ Orionis	2.18	2.59			