*H*β,γ - Sinnerstad *et al.* - 1968

Hβ, Hγ and HeI 4471 Å narrow band photometry for early type stars.

GENERAL INFORMATION

AUTHORS	U. Sinnerstad, J. Arkling, S. H. Alm, P. Brattlund
TELESCOPE	1.0m (reflector), Stockholm Observatory
DETECTOR	EMI 6256 S (uncooled)
MAIN ARTICLE	Sinnerstad U., Arkling J., Alm S.H., Brattlund P. 1968, Ark. Astr. 5, 105

SYSTEM DESCRIPTION

The light coming into the photometer is split in two parts by a beam-splitting mirror and each of the two beams proceeds through a filter and falls on a separate photomultiplier.

BANDS DESCRIPTION [270]

band	filter manufacturer	λ_{peak} (Å)	half-width (Å)
Hγ narrow	Baird Atomic	4340	20
Hγ wide	Baird Atomic	4340	165
HeI narrow	Baird Atomic	4471	23
HeI interm	Baird Atomic	4471	88
HeI wide	Baird Atomic	4471	140
Hβ narrow	Spectrolab	4861	20
Hβ narrow	Spectrolab	4861	26
Hβ wide	Spectrolab	4861	164
Hβ narrow (#)	Baird Atomic	4861	6
Hβ interm (#)	Baird Atomic	4861	28
Hβ wide (#)	Baird Atomic	4861	195

Interference filters.

(#) Filter set used in April and May 1967.

SYSTEM ANALISYS

COLOR INDICES AND PARAMETERS [270]

Line indices are obtained as the magnitude difference corresponding to the ratio of the intensities measured simultaneously through the narrow and wide filters. The simultaneity directly accounts for variability of the atmosphere transmission which is cancelled out. The difference in sensitivity between the direct and reflected beams is accounted for by interchanging their light paths.

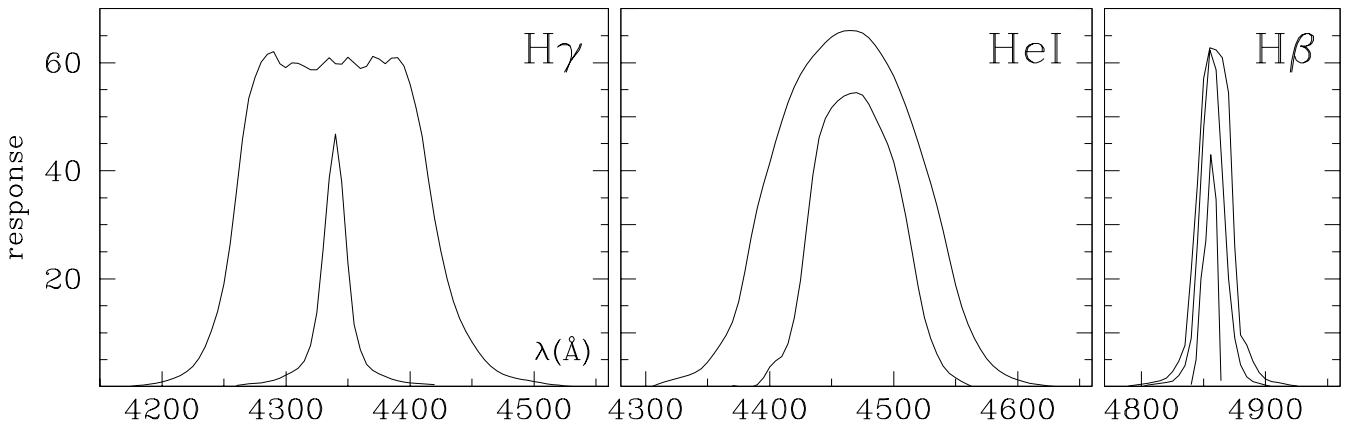
RELATIONS WITH OTHER SYSTEMS [270]

uvby Hβ - Strömgren and Crawford - 1956

$$H\beta = 2.088\ \beta_{Stromgren} - 5.260$$

TRANSMISSION CURVES

As derived from Fig 1a,b,c of [270].



Hγ 20 Å		*Hγ 165 Å*		*HeI 88 Å*		*HeI 140 Å*		*Hβ 6 Å*		*Hβ 20 Å*		*Hβ 26 Å*	
λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ
4252.7	0.0	4167.7	0.0	4377.0	0.0	4304.1	0.0	4825.5	0.0	4799.0	0.0	4785.8	0.0
4269.7	0.5	4203.4	1.1	4394.9	1.7	4327.1	1.7	4833.3	0.8	4820.4	0.8	4811.8	0.9
4288.3	1.1	4219.7	2.7	4401.5	4.1	4345.1	3.4	4842.1	1.7	4829.6	1.9	4824.0	2.5
4305.3	2.7	4230.6	5.4	4412.8	6.6	4361.5	8.3	4843.7	4.2	4835.7	4.2	4831.7	5.4
4316.4	5.4	4240.7	10.9	4420.5	13.2	4375.9	16.6	4846.3	15.0	4839.8	8.3	4836.8	10.8
4323.9	12.0	4252.6	22.6	4425.6	20.7	4386.1	29.0	4854.1	34.1	4842.3	17.5	4841.9	28.3
4329.0	22.3	4259.4	34.8	4431.7	33.1	4401.5	42.6	4856.7	44.9	4847.4	35.7	4847.0	44.5
4330.7	27.2	4269.6	53.0	4439.4	45.5	4416.9	53.8	4859.3	38.2	4852.5	58.2	4850.5	58.6
4334.1	35.9	4274.7	57.1	4445.0	49.7	4438.4	62.1	4861.9	19.1	4856.1	62.7	4853.1	61.1
4337.5	45.1	4279.1	59.8	4456.3	53.2	4452.8	65.2	4863.0	7.5	4860.2	58.2	4857.2	64.0
4340.2	46.7	4283.9	61.3	4469.1	54.5	4467.1	66.0	4867.1	3.7	4865.3	38.2	4860.2	62.3
4342.5	44.3	4293.4	60.9	4475.8	53.8	4478.4	65.0	4872.4	1.7	4870.4	18.9	4863.8	62.3
4345.9	35.1	4303.6	59.8	4485.5	49.7	4488.7	62.1	4877.6	0.8	4875.5	8.3	4865.3	60.7
4349.3	25.0	4328.1	59.2	4494.7	45.1	4504.1	55.4	4882.8	0.0	4880.6	3.7	4868.9	59.8
4352.7	15.2	4335.9	60.9	4500.3	41.4	4524.6	41.8			4885.7	1.7	4869.9	54.8
4356.1	10.3	4344.4	59.5	4510.1	31.4	4540.0	29.0			4891.8	0.8	4872.5	39.9
4362.2	5.4	4351.2	60.9	4515.2	24.8	4550.2	18.6			4906.1	0.0	4875.0	25.8
4372.4	2.7	4364.8	59.2	4525.4	12.4	4566.6	8.3					4877.6	14.1
4390.0	1.1	4371.6	61.4	4531.1	8.3	4575.9	5.0					4882.7	8.7
4412.0	0.5	4378.3	59.8	4539.2	4.1	4595.3	1.7					4887.8	6.0
4432.4	0.0	4385.1	60.9	4550.0	1.7	4637.4	0.0					4898.0	1.8
		4395.3	59.2	4563.8	0.0							4908.2	0.8
		4398.7	57.1									4928.6	0.0
		4402.1	54.1										
		4408.9	47.8										
		4415.7	37.2										
		4422.5	28.0										
		4434.4	16.3										
		4450.4	8.2										
		4458.5	5.4										
		4497.3	1.1										
		4510.8	0.0										