North Polar Sequence - 2000

(version 3a) rev: Nov. 16, 2010 / 17:40 (UTC) -- *(Italics = potential problem or off chart --avoid, **italics = use with cautions**)*

Chart mag based on <u>Tycho-2</u> and/or <u>Hipparcos</u>

Blu-Wht OBA	Wht-Yel F&G	Or-Red K&M	Var m </+/-	AAVSO mag	Right Asc x Declination	Spec Type	SAO	AAVSO-AUID "don't know"	3p, 6P, 9P (deg circ) / Comments
	1.97		m<.06	2.02	02:32x89-16'	F8	308	000-BBF-045	3 Multiple, alf_UMi^
		2.04	m<.06	_____	14:51x74-09	K5	8102	000-BBV-714	bet UMi / 16.7 degrees away; NSV_6846
3.00			m<.06		15:21x71-50'	A2	8220	000-BBW-039	gam UMi / 18.9 degrees away;
		3.21	+/-.03	3.21	23:39x77-38'	K0	10818	000-BCR-774	gam Cep / 11.8 degrees away; NSV_14656
		4.23	Constant	4.25	01:09x86-15'	K0	181	000-BBC-403	9 deg-SW / Oddly, no Bayer/Flamsteed
4.34			Constant	---	17:32x86-35'	A0	2937	don't know	9 deg-NW / del UMi /
		4.69	m<.06	4.71	22:54x84-21'	K5	3816	000-BCQ-932	5.3 degrees away at PA-241
5.26			m<.03	5.27	22:13x86-06'	A0	3721	000-BCQ-166	9 deg-W
	5.57		Constant	5.58	23:27x87-18'	F0	3916	000-BCR-552	6 deg-SW
5.76			Constant	---	17:31x86-58'	A2	2940	don't know	9 deg-NW
	5.83		Constant	---	04:10x86-38'	F5	623	don't know	6 deg-SE
		6.12	m<.03	6.11	06:01x85-11'	K0	914	000-BBK-543	9 deg-SE / 2 10th mag stars 3' away
		6.19	Constant	---	01:16x87-09'	K0	193	don't know	6 deg-SW
	633		m<.06	---	12:17x86-26'	F8	2012	don't know	9 deg-NE
		6.34	m~0.1	var	17:17x 89:02	M3	3020	000-BBY-768	3 deg-NNE / lam UMi, mult, SRB var, unsolved
6.46			m<.06	6.46	01:34x89-01'	A0	209	000-BBD-049	3 deg-SW / duplicity variable (close mag 9) / Suspect star. Doesn't read right.
		6.58	Constant	6.58	22:13x86-13'	K0	3722	000-BJW-026	9 deg-W
6.69			m<.06	---	05:44x85-40'	A0	873	don't know	9 deg-SE
6.74			m<.03	---	24:00x86-42	A2	4006	don't know	6 deg-SW / 121 observations
	6.99		m<.06	7.02	02:19x85-44'	G5	356	000-BBD-702	9 deg-S
7.13			m~.03	var	09:28x88:34	A0	1401	don't know*^	6 deg-WNW / Multiple, duplicity variable
7.45			m<.06	---	22:03x88-04'	A2	3714	don't know	6 deg-W / Probably okay.
	7.47		Constant	---	12:54x87-39'	K2	2125	don't know	9 deg-NNE
7.49			m<.06	---	11:22x87:38	A0	1848	don't know	6 deg-NE / 130 observations
	7.58		Constant	7.57	23:27x86-00'	G5	3912	000-BJW-029	9 deg-SW
	7.85		m<.06	---	03:04x87:02	F2	449	don't know	6 deg-S / 117 observations
		7.86	m<.06	---	01:54x88:33	K0	258	don't know	3 deg-S / 130 observations
		7.93	m<.06	7.99	00:38x85-06'	K0	99	000-BBB-906	9 deg-SW
		7.99	m=.06	---	19:41x87:55	K0	3327	don't know	6 deg-NW / 127 observations
8.02			m<.06	---	05:24x86-17'	B9	818	don't know	9 deg-SE
	8.09		Constant	8.09	22:07x85-25'	G0	3704	000-BJW-031	9 deg-W
	8.11		m=.04	---	16:49x88:09	F8	2849	don't know	6 deg-NW / 117 observations
	8.12		m~.06	---	00:40x89:27	G8	075	don't know	3 deg-NW / 122 observations
8.14			m~.04	var	02:35x88:28	A5	362	none	3 deg-S / NSV_743, 123 observations
		8.21	m<.06	---	18:08x88:49	K0	3143	don't know	6 deg-NW / 111 observations
	8.36		m<0.1	var	16:23x88:36	G8	2802	don't know	6 deg-N / double, variable
8.43			---	---	23:36x85-10'	A2	3939	don't know	9 deg-SW / little information
	8.46		---	8.52	01:58x85-09'	G5	309	000-BBD-339	9 deg-S / little information
		8.48	---	---	03:56x88:30	K0	552	don't know	3 deg-SE / little information
	8.53		m<.03	---	18:11x88:59	G2	3170	don't know	3 deg-NW / no longer considered variable.
		8.54	---	---	17:18x87:58	K3	2935	don't know	6 deg-NW / Little info.
		8.66	---	---	03:00x85-10	M1	456	don't know	9 deg-S / little info. Vars tend to be "M"
		8.74	---	---	21:32x86-46'	M2	3611	don't know	9 deg-W / little info. Vars tend to be "M"
	8.98		---	8.96	01:16x85-06'	F5	202	000-BBC-6000	9 deg-SSW / little information
	8.98b		m<.06	---	14:24x87:58	G8	2440	don't know	6 deg-N / little information
9.05			Constant	---	09:46x89-34'	A3	1157	don't know	3 deg-NNE / Also described as +/-.04m
		9.15	m<.06	---	04:43x89:38	K2	438	don't know	3 deg-NE / little information

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Notes: -The "3 degree" stars are within 3 degrees of the celestial pole. The 6 & 9 degree stars are within those circles around Polaris. A number of marginal reference stars have been included in order to populate the 3 and 6 degree areas..

*^ I'm need a way to look up AUID numbers, other than as they happen to appear in AAVSO comparison star listings (per variable).

* This information and chart has been assembled from the bountiful data in Bill Gray's "Guide 8" sky program and at the AAVSO's excellent web site. Its purpose is to revive the "North Polar Sequence" for my purposes and make it useful for others. It was a principle resource to the labors of many astronomers through the first half of the 20th Century. For those of us without the keen eyes required for visual VSOing, but who find the expense, technology, time, and encumbrances of CCD imaging alienating, traditional, photographic stellar photometry, perhaps through an affordable green filter^^ might provide a middle ground. By making allowance for any light fall-off toward the edges of your image format^^^ and (perhaps) getting an approximation to the spectral response of a "Johnson V" filter equipped sky camera, the backyard amateur astronomer can make a more calibrated contribution to variable star data. (Fixed tripod exposures can be significantly longer at higher declinations, per 1/cos.)

* The spectral variety here in stars of similar magnitude should, when imaged and plotted, give a fair indication of how well our methods are working.

* It is from the Hipparcos Catalogue that comments of "constant" (where available) are taken.

Greek	AID	Russian	English	Greek	AID	Russian	English	Greek	AID	Russian	English
α	alf	alfa	alpha	ι	iot	iota	iota	ρ	rho	rho	rho
β	bet	beta	beta	κ	kap	kappa	kappa	σ	sig	sigma	sigma
γ	gam	gamma	gamma	λ	lam	lambda	lambda	τ	tau	tau	tau
δ	del	delta	delta	μ	miu	mu	mu	υ	ups	upsilon	upsilon
ε	eps	eps	epsilon	ν	niu	nu	nu	φ	phi	phi	phi
ζ	zet	zeta	zeta	ξ	ksi	ksi	xi	χ	khi	khi	chi
η	eta	eta	eta	ο	omi	omicron	omicron	ψ	psi	psi	psi
θ	tet	teta	theta	π	pi	pi	pi	ω	ome	omega	omega

^^ **For example: a Hoya (brand) X1.** Be sure that the filter you choose has a similar transmission curve and optical coatings (to reduce reflections and light loss).

^^^ Modern digital cameras(even affordable compacts) are often internally compensated for vignetting, as well as having a "dark frame" automatically applied after longer exposures, such that a fairly "flat" image frame results. In addition to internal post exposure processing, higher priced DSLRs and "prosumer" digital hand cameras with 4/3 format sensors often have special (and spendy) new lens designs which result in better performance to the image edges at wide aperture settings. Older film camera lenses use a variety of design strategies to reduce "natural", physical, and optical vignetting, so you have to check the actual results with your camera to see what kind of correction is needed for light fall-off. It's best to settle on and use a standard aperture and exposure for the type of target you're shooting, for which the camera's characteristics are well understood. Moreover, light fall-off must be evaluated for the post-exposure processing that you apply to the digital or scanned film image --which might amplify any departures from a photometric flat field. One approach is to shoot a large, evenly illuminated sheet of Crescent (brand) "Photogray" mat board, subject the image to your processing, and measure what results. Another, more realistic approach would be to shoot the same standard stars several times, shifting your camera so as to locate them in different portions of the camera's frame/field, then post-processing all frames the same way. By using a longer lens on a film camera and a small, central portion of the image, the resulting light fall-off might be small enough to ignore. **I'm still trying to find my own way to doing photometry and have made more than 30 revision to my methods over as many years.**