

THE UBV PHOTOELECTRIC OBSERVATIONS OF SHORT PERIOD CEPHEID TT LYN

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Abstract: The UBV photoelectric observations of the short period cepheid TT Lyn obtained in seven-year interval at the Skalnaté Pleso Observatory are given. The mean error of the yellow and blue observations lies within the limits $0^m.006$ and $0^m.020$, the accuracy of the ultraviolet observations is about twice lower of that value.

The short period cepheid TT Lyn was observed systematically at the Astronomical Observatory Skalnaté Pleso from January 20, 1961 to May 12, 1967. The observations were obtained with the 24-inch $f/5.5$ reflector equipped with the photoelectric photometer, installed in the Newtonian focus. As a detector the RCA 1 P 21 type electron multiplier tube is used. In order to reduce the leakage, the anode pin was isolated from the socket of the electron multiplier tube. The high supply for the electron multiplier tube is provided by the high stabilizer type NBZ 411 with a short time stability of 0.05%. The observations were made mostly with the recording potentiometer EZ 4 type which records the output signal with an accuracy of 0.2%. In the optical system, the principle of the exit pupil is used which enables to measure the objects of various structure and the performance of the photometer is not dependent on the position of the object in the focal diaphragm. A detailed description of the photoelectric photometer and its photometric properties are given in our preceding paper (Tremko, 1973). The observations of the standard stars had shown that our instrumental system is very close to the standard UBV photometric system. The observations were started in V region in order to detect possible existence of Blažko effect in the light variations (Tremko, 1971). Later on B and U observations were obtained. The mean error of the yellow and blue observations lies within the limits $0^m.006 - 0^m.020$, the accuracy of the ultraviolet observations is about twice lower of that value.

The data on observing intervals numbers of observations and mean errors are summarized in Tables 1, 2, and 3. The symbols in the

last column of the Tables 1, 2, and 3 denote: 1 - interfering cirrus, 2 - interfering fog, 3 - interfering clouds, 4 - bad transparency. The UBV observations are listed in Table 4.

Table 1. Observing intervals and m.e. of one observation; Yellow

Date	J. D. _{hel} 2430000+	n	m.e.	Notes
1961 Jan. 20/21	7320.3769 - 6720	64	$\pm 0^m.011$	
Jan. 21/22	7321.4424 - 6894	35	.011	
Jan. 27/28	7327.5860 - 7078	38	.013	
Dec. 29/30	7663.2921 - 3421	21	.014	3
1962 Jan. 3/4	7668.3623 - 6290	81	.013	
Jan. 4/5	7669.3323 - 6541	98	.008	
Jan. 8/9	7673.2300 - 5829	106	.017	1,2
Jan. 9/10	7674.2479 - 3762	44	.020	1
Jan. 15/16	7680.2467 - 4828	56	.017	3
Jan. 31/12	7696.2515 - 2765	13	.011	4
March 2/3	7726.2692 - 5699	30	.020	1,2
1963 Dec. 10/11	8374.4771 - 6825	115	.007	1
Dec. 14/15	8378.2789 - 6171	167	.008	2
Dec. 17/18	8381.4313 - 5591	92	.009	2
Dec. 18/19	8382.5488 - 6080	58	.016	
1964 Jan. 3/4	8398.3225 - 6134	136	.014	1
Jan. 4/5	8399.4589 - 6442	101	.010	1
Jan. 5/6	8400.5063 - 6793	111	.016	4
Jan. 6/7	8401.2753 - 6697	199	.018	2
Jan. 11/12	8406.4754 - 6733	154	.011	
Jan. 12/13	8407.4580 - 7089	162	.011	2
Jan. 13/14	8408.2868 - 6043	190	.013	1,2
Jan. 16/17	8411.4154 - 4856	60	.009	2
Jan. 18/19	8413.2594 - 6869	218	.017	1,2
Jan. 19/20	8414.2595 - 4743	172	.014	2
Jan. 20/21	8415.5111 - 6796	145	.011	
Jan. 23/24	8418.4175 - 6832	244	.006	1,2
March 3/4	8458.3208 - 6503	254	.011	1,2
Oct. 1/2	8670.5053 - 6163	75	.011	4
Dec. 6/7	8736.5014 - 5609	54	.018	2

Table 2. Observing intervals and m.e. of one observation; Blue

Date	J. D. hel 2430000+	n	m.e.	Notes
1966 Dec. 23/24	9483.3353 - 4637	91	$\pm 0^m.018$	
Dec. 27/28	9487.3909 - 4947	27	.028	1
1967 Jan. 7/8	9498.3929 - 4291	17	.007	
Jan. 18/19	9509.3239 - 3504	27	.017	1
Jan. 19/20	9510.2581 - 6994	262	.009	
Feb. 7/8	9529.2293 - 3356	106	.016	2
Feb. 15/16	9537.5151 - 5679	46	.006	
Feb. 26/27	9548.3031 - 3334	25	.019	1
Mar. 11/2	9551.2553 - 3271	58	.009	
Mar. 10/11	9560.2653 - 3674	82	.010	1
Mar. 26/27	9576.3129 - 3365	26	.027	1
Apr. 17/18	9598.3448 - 3713	31	.022	4
Apr. 30/1	9611.3663 - 4709	19	.017	4
May 12/13	9623.3930 - 4044	14	.015	4

Table 3. Observing intervals and m.e. of one observation; Ultraviolet

Date	J. D. hel 2430000+	n	m.e.	Notes
1967 Jan. 10/11	9501.4876 - 5054	14	$\pm 0^m.030$	3
Jan. 20/21	9511.2487 - 6289	170	.041	
Jan. 23/24	9514.5114 - 5520	37	.026	
Jan. 31/1.II.	9522.2452 - 2982	31	.041	4
Feb. 6/7	9528.5210 - 5665	32	.058	2
Feb. 7/8	9529.3415 - 3567	8	.041	1
Feb. 15/16	9537.3720 - 5029	101	.025	
Mar. 26/27	9576.3443 - 4016	30	.027	1
Apr. 16/17	9597.2903 - 4604	31	.028	1
Apr. 30/1.V.	9611.3527 - 4221	39	.030	4

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Table 4
Yellow observations

J. D. hel	v	J. D. hel	v
2437320.3769	10.140	.5825	9.727
.3854	10.136	.5863	9.731
.3888	10.128	.5914	9.730
.3916	10.108	.5948	9.726
.3951	10.102	.5978	9.733
.3986	10.083	.5989	9.740
.4055	10.084	.6012	9.748
.4083	10.031	.6029	9.756
.4124	9.994	.6053	9.754
.4194	9.797	.6073	9.759
.4236	9.808	.6095	9.769
.4263	9.774	.6114	9.791
.4284	9.739	.6133	9.790
.4368	9.714	.6157	9.782
.4402	9.697	.6174	9.793
.4423	9.694	.6195	9.786
.4458	9.647	.6222	9.779
.4493	9.617	.6258	9.797
.4534	9.621	.6288	9.801
.4590	9.591	.6309	9.803
.5649	9.657	.6340	9.810
.5668	9.672	.6363	9.804
.5694	9.688	.6386	9.816
.5748	9.697	.6423	9.812
.5768	9.717	.6464	9.812
.5805	9.703	.6485	9.828

J. D. hel	v	J. D. hel	v
.6503	9.843	.6149	9.842
.6521	9.843	.6183	9.798
.6541	9.860	.6217	9.746
.6561	9.853	.6239	9.703
.6579	9.850	.6259	9.722
.6599	9.850	.6300	9.711
.6619	9.840	.6324	9.665
.6644	9.869	.6365	9.660
.6663	9.867	.6393	9.656
.6681	9.872	.6421	9.641
.6698	9.863	.6447	9.622
.6720	9.863	.6589	9.541
		.6617	9.520
2437321.4424	10.023	.6637	9.497
.4473	10.040	.6661	9.488
.4504	10.038	.6697	9.482
.4526	10.039	.6724	9.489
.4550	10.042	.6743	9.456
.4575	10.036	.6773	9.459
.4602	10.054	.6815	9.448
.4632	10.022	.6849	9.459
.5930	10.140	.6894	9.477
.5965	10.095		
.5998	10.067	2437327.5960	9.762
.6079	9.906	.5983	9.748
.6110	9.867	.6003	9.720

Table 4 – continued

J.D. _{hel}	V	J.D. _{hel}	V	J.D. _{hel}	V	J.D. _{hel}	V
.6027	9.725	.3735	9.894	.5950	10.074	.5048	9.748
.6048	9.705	.3756	9.899	.5985	10.063	.5066	9.750
.6092	9.682	.3790	9.901	.6005	10.079	.5104	9.754
.6119	9.683	.3825	9.899	.6047	10.024	.5124	9.746
.6147	9.656	.3839	9.900	.6061	10.028	.5163	9.763
.6175	9.637	.3880	9.922	.6103	10.039	.5180	9.780
.6206	9.614	.3894	9.918	.6123	10.039	.5229	9.804
.6282	9.557	.3922	9.928	.6165	10.083	.5246	9.800
.6307	9.541	.3936	9.928	.6179	10.063	.5323	9.809
.6333	9.521	.3970	9.913	.6221	10.098	.5337	9.827
.6354	9.513	.3985	9.921	.6235	10.117	.5374	9.832
.6381	9.496	.4019	9.947	.6276	10.129	.5388	9.832
.6406	9.498	.4033	9.942	.6290	10.127	.5427	9.858
.6428	9.447	.4068	9.949			.5444	9.852
.6451	9.476	.4082	9.964	2437669.3323	9.750	.5485	9.854
.6486	9.451	.4111	9.930	.3357	9.688	.5503	9.864
.6508	9.473	.4130	9.946	.3371	9.690	.5541	9.873
.6539	9.446	.4172	9.954	.3401	9.690	.5562	9.871
.6556	9.497	.4186	9.963	.3424	9.695	.5601	9.861
.6583	9.476	.4228	9.975	.3462	9.667	.5624	9.875
.6608	9.486	.4241	9.973	.3476	9.667	.5659	9.865
.6640	9.470	.4283	9.965	.3517	9.621	.5673	9.890
.6661	9.511	.4297	9.969	.3531	9.616	.5722	9.892
.6687	9.520	.4339	9.969	.3573	9.575	.5739	9.918
.6713	9.506	.4353	9.973	.3587	9.574	.5787	9.917
.6747	9.490	.4394	9.980	.3628	9.547	.5795	9.911
.6835	9.525	.4408	9.983	.3642	9.547	.5833	9.902
.6859	9.544	.4735	10.014	.3687	9.508	.5851	9.908
.6883	9.561	.4748	10.007	.3691	9.502	.5909	9.953
.6918	9.577	.4783	10.023	.3726	9.500	.5930	9.946
.6953	9.592	.4797	10.032	.3739	9.494	.5965	9.962
.6994	9.595	.4839	10.030	.3776	9.477	.5985	9.944
.7015	9.590	.4853	10.045	.3788	9.482	.6030	9.955
.7043	9.610	.4894	10.058	.3826	9.476	.6041	9.952
.7078	9.625	.4957	10.031	.3840	9.474	.6080	9.968
		.4971	10.034	.3874	9.475	.6094	9.949
2437663.2921	10.163	.5005	10.025	.3888	9.484	.6131	9.966
.2931	10.132	.5019	10.032	.3923	9.481	.6149	9.966
.2959	10.145	.5061	10.055	.3937	9.495	.6242	9.979
.2970	10.109	.5075	10.052	.3972	9.489	.6263	9.969
.3000	10.126	.5116	10.069	.3989	9.500	.6309	9.991
.3011	10.148	.5130	10.058	.4024	9.508	.6323	10.001
.3042	10.136	.5172	10.065	.4038	9.512	.6360	10.008
.3053	10.139	.5186	10.065	.4073	9.518	.6378	9.986
.3088	10.137	.5221	10.062	.4090	9.532	.6416	9.999
.3102	10.146	.5235	10.048	.4114	9.526	.6437	9.998
.3129	10.137	.5269	10.049	.4138	9.536	.6479	10.008
.3185	10.150	.5283	10.067	.4177	9.560	.6499	10.013
.3213	10.149	.5325	10.072	.4194	9.566	.6541	10.023
.3240	10.125	.5339	10.084	.4229	9.585		
.3254	10.125	.5380	10.066	.4242	9.579	2437673.2300	10.010
.3296	10.074	.5394	10.066	.4281	9.587	.2314	10.005
.3310	10.096	.5436	10.063	.4298	9.596	.2356	9.996
.3352	10.029	.5450	10.054	.4333	9.609	.2369	9.995
.3365	10.041	.5714	10.073	.4347	9.609	.2404	9.997
.3407	9.963	.5728	10.076	.4385	9.614	.2416	10.012
.3421	9.944	.5769	10.042	.4402	9.621	.2453	10.018
		.5783	10.046	.4437	9.642	.2467	10.006
2437668.3623	9.859	.5825	10.069	.4451	9.638	.2494	10.015
.3637	9.859	.5839	10.063	.4485	9.657	.2508	10.004
.3672	9.892	.5880	10.092	.4499	9.651	.2543	10.023
.3686	9.883	.5894	10.094	.4996	9.738	.2557	10.045
.3721	9.898	.5936	10.074	.5013	9.742	.2585	10.051

Table 4 – continued

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V
.2599	10.045	.5057	9.818	.3450	9.858	.4731	10.033
.2633	10.023	.5092	9.787	.3491	9.866	.4744	10.097
.2647	10.007	.5106	9.772	.3505	9.871	.4779	10.064
.2682	9.993	.5133	9.706	.3547	9.921	.4793	10.050
.2696	10.007	.5154	9.715	.3561	9.905	.4814	10.055
.2724	10.011	.5182	9.741	.3603	9.898	.4828	10.077
.2738	10.008	.5196	9.706	.3616	9.905		
.2779	10.065	.5231	9.666	.3651	9.882	2437696.2515	9.502
.2793	10.062	.5244	9.683	.3665	9.911	.2529	9.503
.2821	10.043	.5272	9.631	.3707	9.901	.2557	9.497
.2835	10.060	.5286	9.650	.3721	9.914	.2571	9.482
.2863	10.037	.5317	9.652	.3762	9.907	.2599	9.484
.2876	10.050	.5338	9.607			.2614	9.464
.2904	10.028	.5356	9.909	2437680.2467	9.741	.2640	9.459
.2928	10.054	.5366	9.607	.2477	9.746	.2654	9.466
.2994	10.067	.5416	9.579	.2501	9.781	.2682	9.459
.3008	10.062	.5432	9.572	.2606	9.776	.2696	9.471
.3092	10.051	.5460	9.529	.2616	9.766	.2724	9.473
.3106	10.052	.5467	9.510	.2643	9.788	.2738	9.473
.3168	10.083	.5501	9.516	.2654	9.781	.2765	9.476
.3196	10.029	.5515	9.514	.2682	9.776		
.3231	10.055	.5550	9.482	.2692	9.782	2437726.2692	9.775
.3244	10.055	.5613	9.474	.2724	9.788	.2740	9.798
.3390	10.034	.5636	9.471	.2734	9.787	.2754	9.793
.3404	10.008	.5661	9.456	.2765	9.795	.2789	9.779
.3446	10.037	.5675	9.467	.2775	9.799	.2803	9.796
.3460	10.072	.5703	9.459	.2807	9.787	.2845	9.791
.3501	10.029	.5720	9.464	.2817	9.796	.2858	9.789
.3515	10.030	.5821	9.490	.2845	9.818	.3821	9.984
.3557	10.089	.5829	9.507	.2856	9.824	.3845	9.988
.3696	10.075			.2883	9.829	.3886	9.982
.3710	10.065	2437674.2478	9.642	.2897	9.834	.3900	9.980
.3738	10.073	.2491	9.657	.2942	9.819	.3935	9.983
.3751	10.081	.2554	9.686	.2956	9.815	.3949	9.985
.3807	10.095	.2568	9.709	.2984	9.818	.3977	10.050
.3846	10.054	.2610	9.749	.2994	9.810	.3990	10.036
.3860	10.042	.2630	9.749	.3025	9.833	.4310	10.064
.3897	10.075	.2672	9.706	.3036	9.833	.4324	10.053
.3911	10.071	.2686	9.701	.3064	9.823	.4352	10.039
.3953	10.072	.2728	9.754	.3078	9.831	.4365	10.043
.3968	10.114	.2741	9.737	.3119	9.839	.4400	10.027
.4106	10.144	.2783	9.762	.3133	9.852	.4414	10.039
.4129	10.130	.2797	9.764	.3175	9.847	.4456	10.040
.4140	10.113	.2832	9.763	.3189	9.860	.4470	10.020
.4154	10.107	.2846	9.741	.3231	9.869	.5143	10.083
.4404	10.149	.2887	9.788	.3244	9.879	.5157	10.063
.4435	10.154	.2908	9.813	.3453	9.886	.5629	10.002
.4453	10.161	.2950	9.778	.3467	9.906	.5643	10.014
.4467	10.155	.2971	9.807	.3522	9.919	.5671	9.997
.4515	10.184	.3012	9.836	.3536	9.892	.5685	10.016
.4717	10.138	.3026	9.814	.3703	9.938	.5699	10.096
.4765	10.130	.3061	9.820	.3717	9.948		
.4793	10.106	.3110	9.842	.3744	9.944	2438374.4771	9.754
.4807	10.126	.3123	9.805	.3758	9.975	.4840	9.774
.4856	10.055	.3221	9.849	.3904	9.947	.4850	9.778
.4869	10.048	.235	9.854	.3918	9.972	.4859	9.790
.4911	10.014	.276	9.880	.3988	9.941	.4869	9.791
.4935	9.947	.3290	9.875	.4140	10.009	.4880	9.806
.4960	9.931	.3332	9.849	.4154	9.994	.4890	9.797
.4974	9.914	.3346	9.849	.4425	10.059	.4905	9.785
.4994	9.917	.3387	9.865	.4439	10.067	.4919	9.807
.5008	9.924	.3401	9.884	.4467	10.081	.4932	9.817
.5446	9.834	.3446	9.849	.4481	10.059	.4943	9.819

Table 4 – continued.

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{Hel}	V
.4955	9.796	.6329	10.024	.3094	10.039	.4453	10.166
.4967	9.802	.6340	10.019	.3105	10.036	.4467	10.171
.5031	9.803	.6352	10.031	.3153	10.070	.4481	10.160
.5044	9.817	.6363	10.012	.3164	10.074	.4490	10.153
.5056	9.829	.6379	10.018	.3175	10.066	.4533	10.146
.5067	9.827	.6395	10.013	.3185	10.061	.4542	10.144
.5078	9.820	.6403	10.035	.3196	10.074	.4553	10.129
.5092	9.818	.6413	10.025	.3204	10.058	.4562	10.119
.5103	9.817	.6422	10.020	.3216	10.057	.4573	10.117
.5116	9.827	.6434	10.018	.3227	10.027	.4583	10.113
.5130	9.839	.6445	10.021	.3238	10.037	.4593	10.095
.5142	9.836	.6496	10.036	.3250	10.025	.4604	10.091
.5187	9.835	.6506	10.023	.3261	10.028	.4616	10.064
.5202	9.842	.6517	10.024	.3269	10.019	.4629	10.058
.5213	9.842	.6525	10.036	.3302	10.096	.4696	10.971
.5224	9.834	.6535	10.034	.3314	10.081	.4706	9.937
.5238	9.835	.6544	10.024	.3327	10.087	.4715	9.897
.5273	9.852	.6554	10.039	.3336	10.092	.4723	9.894
.5303	9.828	.6563	10.033	.3348	10.071	.4734	9.893
.5314	9.838	.6574	10.038	.3364	10.076	.4744	9.862
.5324	9.852	.6584	10.027	.3381	10.089	.4753	9.847
.5338	9.848	.6624	10.048	.3392	10.072	.4763	9.826
.5372	9.856	.6634	10.039	.3405	10.085	.4771	9.820
.5382	9.865	.6644	10.032	.3417	10.080	.4787	9.785
.5393	9.865	.6652	10.044	.3428	10.067	.4798	9.798
.5404	9.871	.6660	10.036	.3440	10.064	.4807	9.773
.5417	9.857	.6669	10.033	.3458	10.070	.4820	9.766
.5429	9.870	.6678	10.033	.3494	10.072	.4861	9.704
.5441	9.875	.6687	10.045	.3505	10.068	.4869	9.697
.5452	9.875	.6696	10.046	.3518	10.080	.4878	9.690
.5461	9.878	.6705	10.053	.3530	10.058	.4893	9.671
.5472	9.884	.6743	10.051	.3835	10.126	.4905	9.681
.5868	9.971	.6753	10.056	.3981	10.229	.4915	9.678
.5878	9.970	.6761	10.070	.3992	10.182	.4925	9.691
.5889	9.986	.6769	10.050	.4002	10.158	.4939	9.661
.5901	9.960	.6778	10.057	.4015	10.170	.4952	9.703
.5913	9.959	.6788	10.043	.4026	10.182	.4971	9.656
.5925	9.954	.6797	10.050	.4038	10.179	.4984	9.651
.5938	9.970	.6807	10.066	.4050	10.179	.5051	9.652
.5950	9.960	.6816	10.072	.4062	10.188	.5103	9.643
.5960	9.963	.6825	10.054	.4172	10.190	.5118	9.580
.5972	9.981			.4181	10.211	.5131	9.587
.6022	9.966	2438378.2789	10.066	.4192	10.203	.5142	9.569
.6036	9.969	.2799	10.057	.4203	10.185	.5153	9.557
.6049	9.976	.2834	10.059	.4215	10.173	.5164	9.556
.6063	9.974	.2842	10.080	.4227	10.187	.5175	9.527
.6075	9.980	.2852	10.032	.4239	10.194	.5185	9.541
.6087	9.976	.2863	10.050	.4250	10.184	.5196	9.505
.6098	9.987	.2874	10.041	.4260	10.190	.5214	9.506
.6108	9.985	.2887	10.004	.4271	10.177	.5228	9.505
.6122	9.977	.2932	10.074	.4280	10.165	.5239	9.502
.6135	9.981	.2941	10.070	.4292	10.184	.5254	9.490
.6171	9.990	.2956	10.058	.4303	10.189	.5268	9.480
.6181	10.004	.2988	10.083	.4314	10.184	.5286	9.462
.6192	10.003	.3000	10.085	.4328	10.183	.5322	9.491
.6203	9.991	.3010	10.069	.4365	10.188	.5335	9.498
.6216	9.999	.3019	10.065	.4372	10.179	.5348	9.500
.6229	10.007	.3029	10.055	.4385	10.185	.5364	9.480
.6240	10.003	.3039	10.051	.4398	10.177	.5375	9.480
.6250	10.006	.3052	10.052	.4410	10.169	.5386	9.485
.6263	9.993	.3064	10.043	.4420	10.174	.5402	9.470
.6274	10.013	.3075	10.042	.4431	10.170	.5417	9.478
.6317	10.014	.3084	10.040	.4442	10.163	.5426	9.489

Table 4 – continued

J. D. _{hel}	v	J. D. _{hel}	v	J. D. _{hel}	v	J. D. _{hel}	v
.5440	9.475	.4905	9.680	.5636	10.107	.3401	9.759
.5450	9.483	.4916	9.654	.5644	10.128	.3414	9.741
.5467	9.480	.4928	9.628	.5655	10.106	.3427	9.739
.5956	9.629	.4942	9.621	.5663	10.111	.3444	9.721
.5967	9.636	.4956	9.633	.5671	10.118	.3450	9.733
.6003	9.632	.4968	9.616	.5680	10.114	.3461	9.739
.6011	9.616	.5004	9.602	.5687	10.135	.3470	9.752
.6021	9.617	.5020	9.588	.5695	10.136	.3479	9.765
.6031	9.616	.5029	9.590	.5704	10.133	.3520	9.757
.6040	9.611	.5036	9.577	.5712	10.128	.3531	9.729
.6051	9.626	.5043	9.562	.5744	10.116	.3544	9.746
.6060	9.634	.5053	9.561	.5753	10.121	.3555	9.746
.6068	9.632	.5062	9.550	.5762	10.117	.3567	9.737
.6078	9.643	.5073	9.545	.5771	10.122	.3576	9.734
.6088	9.646	.5087	9.533	.5780	10.124	.3587	9.734
.6100	9.660	.5101	9.530	.5788	10.137	.3599	9.731
.6109	9.664	.5112	9.535	.5799	10.138	.3611	9.731
.6117	9.678	.5122	9.508	.5809	10.152	.3623	9.735
.6160	9.749	.5156	9.492	.5820	10.142	.3637	9.736
.6171	9.658	.5166	9.497	.5828	10.128	.3674	9.767
		.5176	9.481	.5838	10.160	.3686	9.774
2438381.4313	10.149	.5190	9.471	.5848	10.148	.3697	9.778
.4323	10.149	.5204	9.478	.5880	10.134	.3711	9.772
.4366	10.162	.5219	9.462	.5890	10.129	.3724	9.771
.4375	10.147	.5234	9.460	.5897	10.146	.3737	9.789
.4384	10.151	.5246	9.456	.5904	10.144	.3748	9.783
.4391	10.157	.5259	9.461	.5913	10.140	.3761	9.787
.4400	10.142	.5272	9.462	.5921	10.151	.3773	9.775
.4410	10.120	.5283	9.465	.5928	10.154	.3785	9.790
.4419	10.127	.5353	9.492	.5936	10.155	.3796	9.786
.4429	10.117	.5368	9.487	.5943	10.172	.3835	9.744
.4438	10.096	.5378	9.485	.5950	10.147	.3844	9.811
.4448	10.123	.5390	9.493	.5958	10.149	.3853	9.814
.4458	10.111	.5402	9.494	.5966	10.159	.3862	9.798
.4464	10.097	.5414	9.511	.5975	10.164	.3872	9.802
.4508	10.097	.5426	9.505	.6001	10.158	.3882	9.808
.4519	10.044	.5436	9.512	.6011	10.168	.3893	9.796
.4532	10.016	.5449	9.511	.6020	10.170	.3901	9.804
.4544	10.003	.5480	9.522	.6026	10.189	.3912	9.800
.4558	9.983	.5491	9.537	.6037	10.186	.3920	9.797
.4568	9.988	.5501	9.535	.6041	10.174	.3929	9.805
.4578	9.971	.5509	9.541	.6049	10.170	.4608	9.934
.4587	9.951	.5520	9.552	.6057	10.166	.4620	9.948
.4597	9.949	.5528	9.566	.6065	10.168	.4630	9.963
.4611	9.913	.5538	9.548	.6073	10.186	.4642	9.954
.4621	9.906	.5552	9.553	.6080	10.195	.4652	9.951
.4632	9.869	.5562	9.555			.4664	9.940
.4646	9.841	.5573	9.555	2438398.3225	9.696	.4672	9.943
.4681	9.802	.5583	9.569	.3235	9.672	.4686	9.950
.4693	9.806	.5591	9.580	.3244	9.670	.4698	9.960
.4702	9.766			.3255	9.675	.4708	9.963
.4715	9.770	2438382.5488	10.063	.3262	9.687	.4720	9.950
.4728	9.742	.5498	10.070	.3274	9.678	.4732	9.942
.4741	9.732	.5506	10.081	.3283	9.689	.4741	9.953
.4753	9.732	.5514	10.079	.3293	9.679	.4751	9.950
.4765	9.747	.5523	10.084	.3303	9.697	.4796	9.956
.4777	9.739	.5533	10.084	.3311	9.702	.4805	9.956
.4785	9.733	.5541	10.087	.3341	9.715	.4817	9.959
.4846	9.723	.5554	10.083	.3350	9.729	.4827	9.972
.4857	9.708	.5565	10.100	.3359	9.754	.4840	9.965
.4872	9.692	.5574	10.100	.3368	9.717	.4853	9.954
.4885	9.681	.5615	10.107	.3378	9.710	.4864	9.934
.4896	9.680	.5626	10.094	.3387	9.745	.4874	9.987

Table 4 – continued

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V
.4884	9.959	.4650	9.483	.5721	9.725	.5442	10.188
.4896	9.954	.4662	9.472	.5732	9.736	.5459	10.176
.4907	9.962	.4674	9.490	.5751	9.742	.5474	10.157
.4918	9.965	.4686	9.474	.5764	9.773	.5482	10.180
.4964	9.970	.4698	9.492	.5773	9.738	.5493	10.181
.4978	9.966	.4740	9.516	.5783	9.784	.5539	10.137
.4990	9.981	.4752	9.518	.5793	9.746	.5558	10.145
.5000	9.998	.4762	9.532	.5808	9.776	.5565	10.137
.5012	9.993	.4773	9.525	.5817	9.770	.5577	10.127
.5024	9.998	.4784	9.539	.5829	9.773	.5586	10.118
.5037	9.991	.4794	9.530	.5841	9.743	.5595	10.125
.5049	9.993	.4805	9.516	.5852	9.797	.5607	10.126
.5063	9.987	.4814	9.522	.6201	9.839	.5635	10.080
.5081	9.998	.4825	9.539	.6211	9.839	.5651	10.058
.5096	9.995	.4837	9.542	.6226	9.835	.5672	10.041
.5107	9.996	.4848	9.547	.6237	9.819	.5638	9.814
.5119	9.993	.4858	9.568	.6248	9.860	.5848	9.813
.5162	9.985	.4870	9.556	.6258	9.849	.5859	9.784
.5173	9.993	.4881	9.547	.6270	9.845	.5884	9.740
.5187	9.999	.4919	9.596	.6280	9.852	.5894	9.759
.5198	9.992	.4936	9.579	.6292	9.868	.5904	9.757
.5213	10.000	.4947	9.597	.6303	9.860	.6011	9.688
.5226	9.997	.4956	9.592	.6315	9.849	.6026	9.724
.5236	10.009	.4977	9.595	.6354	9.869	.6037	9.701
.5246	10.015	.4988	9.604	.6366	9.872	.6046	9.698
.5256	10.006	.4997	9.611	.6373	9.861	.6052	9.716
.5266	10.008	.5006	9.604	.6382	9.873	.6066	9.709
.5278	10.015	.5019	9.615	.6393	9.885	.6073	9.701
.5292	10.010	.5031	9.625	.6404	9.875	.6083	9.681
.5338	9.991	.5042	9.626	.6412	9.902	.6092	9.691
.5353	9.990	.5055	9.611	.6421	9.901	.6100	9.670
.5366	9.989	.5064	9.642	.6431	9.889	.6111	9.686
.5381	10.000	.5113	9.612	.6442	9.899	.6124	9.673
.5393	10.000	.5124	9.612			.6137	9.639
.5406	10.000	.5136	9.627	2438400.5063	10.143	.6189	9.583
.5420	10.000	.5150	9.622	.5073	10.172	.6198	9.568
.5434	10.002	.5162	9.652	.5079	10.164	.6210	9.580
.5447	10.004	.5175	9.626	.5085	10.171	.6220	9.568
.5457	10.027	.5186	9.615	.5107	10.176	.6230	9.579
.5471	10.015	.5196	9.627	.5118	10.184	.6242	9.544
.5526	10.031	.5208	9.629	.5127	10.214	.6253	9.551
.5539	10.007	.5217	9.624	.5136	10.198	.6264	9.540
.5554	10.019	.5227	9.637	.5149	10.164	.6275	9.545
.5566	10.030	.5240	9.632	.5158	10.179	.6286	9.546
.5585	10.043	.5250	9.642	.5167	10.171	.6301	9.510
.5602	10.043	.5292	9.633	.5176	10.155	.6310	9.509
.5615	10.037	.5303	9.630	.5220	10.163	.6320	9.513
.5627	10.039	.5338	9.645	.5230	10.155	.6392	9.487
.5636	10.031	.5350	9.643	.5239	10.146	.6402	9.486
.5647	10.039	.5499	9.697	.5253	10.155	.6412	9.514
.5658	10.042	.5511	9.705	.5264	10.155	.6423	9.503
.5669	10.022	.5525	9.693	.5268	10.185	.6435	9.471
.5684	10.053	.5539	9.706	.5274	10.184	.6446	9.489
.6093	10.025	.5551	9.695	.5288	10.177	.6455	9.501
.6107	10.032	.5563	9.684	.5354	10.167	.6464	9.519
.6122	10.073	.5577	9.701	.5362	10.151	.6474	9.507
.6134	10.073	.5591	9.715	.5370	10.197	.6487	9.489
		.5601	9.709	.5379	10.203	.6502	9.499
2438399.4589	9.457	.5616	9.716	.5389	10.163	.6519	9.522
.4599	9.467	.5630	9.706	.5397	10.164	.6557	9.510
.4612	9.459	.5639	9.713	.5408	10.159	.6572	9.517
.4627	9.478	.5696	9.725	.5419	10.138	.6584	9.506
.4638	9.490	.5708	9.739	.5430	10.172	.6593	9.517

Table 4 – continued

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V
.6600	9.550	.3406	9.731	.5381	10.035	.6317	10.064
.6613	9.520	.3416	9.723	.5390	10.048	.6327	10.050
.6624	9.537	.3429	9.729	.5401	10.064	.6340	10.043
.6632	9.545	.3442	9.750	.5413	10.053	.6352	10.054
.6640	9.536	.3455	9.730	.5425	10.037	.6361	10.082
.6649	9.534	.3466	9.733	.5437	10.047	.6372	10.085
.6660	9.552	.3521	9.760	.5448	10.045	.6420	10.051
.6667	9.537	.3540	9.771	.5459	10.047	.6431	10.077
.6696	9.552	.3553	9.789	.5503	10.058	.6440	10.093
.6703	9.558	.3563	9.793	.5514	10.070	.6448	10.104
.6711	9.552	.3572	9.783	.5526	10.062	.6456	10.085
.6731	9.552	.3582	9.767	.5540	10.061	.6467	10.076
.6740	9.569	.3597	9.772	.5553	10.058	.6477	10.073
.6748	9.573	.3610	9.783	.5566	10.055	.6488	10.091
.6758	9.604	.3624	9.785	.5579	10.076	.6500	10.034
.6765	9.581	.3635	9.783	.5590	10.074	.6513	10.027
.6776	9.600	.3644	9.784	.5619	10.092	.6525	10.081
.6784	9.596	.3653	9.789	.5632	10.051	.6534	10.078
.6793	9.584	.3702	9.789	.5641	10.045	.6586	10.031
		.3710	9.796	.5694	10.033	.6596	10.052
2438401.2753	9.579	.3721	9.786	.5705	10.049	.6606	10.078
.2763	9.600	.3730	9.796	.5716	10.052	.6615	10.079
.2775	9.593	.3752	9.816	.5730	10.082	.6630	10.091
.2788	9.579	.3761	9.834	.5742	10.058	.6641	10.061
.2800	9.554	.3771	9.826	.5755	10.094	.6653	10.054
.2815	9.565	.3780	9.827	.5764	10.105	.6662	10.046
.2827	9.552	.3789	9.823	.5780	10.077	.6671	10.068
.2838	9.573	.3798	9.835	.5793	10.060	.6678	10.090
.2852	9.576	.3807	9.831	.5805	10.063	.6686	10.080
.2866	9.602	.3817	9.826	.5816	10.087	.6697	10.063
.2880	9.575	.3828	9.816	.5830	10.107		
.2890	9.576	.3839	9.821	.5879	10.036	2438406.4754	10.183
.2902	9.569	.3884	9.832	.5893	10.071	.4813	10.165
.2952	9.647	.3895	9.830	.5902	10.099	.4825	10.175
.2960	9.643	.3907	9.836	.5911	10.083	.4835	10.179
.2971	9.652	.3919	9.844	.5921	10.062	.4844	10.184
.2981	9.655	.3927	9.825	.5934	10.031	.4853	10.173
.2993	9.640	.3939	9.838	.5948	10.038	.4861	10.191
.3006	9.627	.3950	9.845	.5962	10.041	.4868	10.192
.3016	9.627	.3961	9.845	.5974	10.070	.4877	10.186
.3028	9.630	.3973	9.860	.5986	10.046	.4886	10.175
.3041	9.623	.4037	9.843	.5997	10.043	.4896	10.186
.3052	9.636	.4047	9.861	.6007	10.083	.4904	10.189
.3066	9.656	.4076	9.852	.6062	10.047	.4950	10.152
.3079	9.645	.4086	9.853	.6072	10.037	.4961	10.130
.3126	9.648	.4097	9.878	.6084	10.049	.4969	10.135
.3139	9.651	.4107	9.870	.6094	10.087	.4979	10.148
.3153	9.659	.4120	9.866	.6109	10.068	.4989	10.162
.3160	9.658	.5133	10.011	.6118	10.040	.4999	10.144
.3184	9.657	.5144	10.031	.6128	10.064	.5007	10.152
.3195	9.660	.5153	10.038	.6142	10.093	.5016	10.140
.3209	9.661	.5167	10.042	.6154	10.058	.5027	10.151
.3221	9.682	.5188	10.032	.6163	10.071	.5037	10.154
.3232	9.678	.5213	10.057	.6174	10.070	.5044	10.148
.3242	9.686	.5224	10.034	.6185	10.059	.5053	10.164
.3253	9.694	.5235	10.003	.6198	10.047	.5092	10.134
.3260	9.692	.5271	10.003	.6136	10.072	.5103	10.136
.3322	9.731	.5282	10.001	.6249	10.077	.5113	10.155
.3336	9.720	.5294	10.036	.6258	10.065	.5125	10.147
.3349	9.723	.5338	10.047	.6269	10.066	.5136	10.150
.3364	9.752	.5349	10.043	.6281	10.089	.5147	10.138
.3377	9.736	.5359	10.041	.6294	10.069	.5157	10.141
.3389	9.752	.5370	10.046	.6306	10.070	.5168	10.132

Table 4 – continued

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V
.5178	10.155	.6007	9.524	.4612	10.005	.5363	10.035
.5189	10.155	.6046	9.512	.4620	9.980	.5373	10.041
.5200	10.162	.6055	9.502	.4628	9.988	.5384	10.032
.5211	10.162	.6063	9.499	.4635	9.988	.5418	10.042
.5251	10.144	.6069	9.502	.4644	9.985	.5429	10.037
.5264	10.152	.6077	9.497	.4651	9.985	.5439	10.040
.5271	10.148	.6085	9.485	.4657	9.981	.5448	10.049
.5280	10.147	.6091	9.485	.4665	9.979	.5457	10.051
.5298	10.132	.6116	9.482	.4672	9.981	.5466	10.048
.5306	10.142	.6124	9.490	.4707	10.001	.5474	10.062
.5315	10.117	.6133	9.480	.4717	10.028	.5483	10.072
.5327	10.120	.6143	9.457	.4725	9.997	.5494	10.021
.5337	10.120	.6176	9.463	.4734	10.000	.5502	10.036
.5346	10.121	.6184	9.474	.4755	9.999	.5512	10.032
.5355	10.127	.6192	9.474	.4764	9.996	.5519	10.042
.5364	10.137	.6204	9.494	.4773	9.988	.5556	10.039
.5403	10.082	.6215	9.463	.4783	10.004	.5564	10.035
.5410	10.085	.6225	9.466	.4792	10.000	.5573	10.051
.5419	10.071	.6236	9.462	.4800	9.986	.5580	10.062
.5427	10.047	.6246	9.472	.4809	10.000	.5589	10.049
.5436	10.074	.6255	9.477	.4818	10.000	.5599	10.054
.5446	10.053	.6266	9.480	.4829	10.001	.5608	10.049
.5454	10.057	.6277	9.485	.4838	10.000	.5617	10.065
.5464	10.024	.6285	9.487	.4848	10.007	.5626	10.056
.5473	10.010	.6314	9.493	.4888	10.012	.5634	10.063
.5482	10.006	.6320	9.474	.4897	10.014	.5642	10.067
.5494	10.003	.6330	9.476	.4905	10.020	.5650	10.049
.5504	9.990	.6341	9.507	.4916	10.008	.5659	10.072
.5550	9.862	.6351	9.492	.4927	10.006	.5851	10.093
.5563	9.849	.6359	9.503	.4936	10.016	.5858	10.067
.5575	9.848	.6368	9.506	.4948	10.009	.5868	10.048
.5583	9.833	.6378	9.480	.4957	10.009	.5874	10.082
.5592	9.820	.6388	9.508	.4967	10.020	.5882	10.055
.5602	9.805	.6400	9.543	.4977	10.009	.5888	10.072
.5611	9.801	.6451	9.512	.4985	10.014	.5897	10.090
.5623	9.792	.6460	9.522	.4993	10.017	.5903	10.088
.5631	9.801	.6471	9.526	.5075	10.017	.5911	10.046
.5641	9.749	.6483	9.519	.5084	10.018	.5918	10.089
.5650	9.730	.6497	9.526	.5093	10.020	.5926	10.097
.5663	9.721	.6512	9.564	.5102	10.030	.5934	10.084
.5748	9.671	.6520	9.557	.5110	10.014	.5941	10.100
.5759	9.679	.6530	9.565	.5120	10.016	.6569	10.073
.5769	9.670	.6537	9.580	.5130	10.026	.6576	10.091
.5771	9.656	.6546	9.586	.5140	10.025	.6583	10.103
.5784	9.649	.6555	9.595	.5152	10.033	.6589	10.091
.5796	9.641	.6565	9.618	.5162	10.040	.6616	10.089
.5806	9.643	.6620	9.621	.5173	10.029	.6623	10.104
.5817	9.640	.6629	9.615	.5183	10.036	.6630	10.104
.5828	9.631	.6643	9.641	.5192	10.033	.6637	10.082
.5837	9.637	.6654	9.643	.5200	10.048	.6644	10.093
.5856	9.640	.6665	9.643	.5208	10.010	.6650	10.107
.5866	9.609	.6676	9.639	.5216	10.015	.6657	10.091
.5902	9.600	.6686	9.642	.5257	10.053	.6664	10.095
.5913	9.594	.6696	9.671	.5270	10.052	.6671	10.065
.5925	9.583	.6706	9.648	.5277	10.058	.6678	10.068
.5936	9.574	.6715	9.654	.5285	10.074	.6767	10.136
.5948	9.562	.6723	9.659	.5294	10.015	.6774	10.141
.5955	9.562	.6733	9.657	.5305	10.018	.6788	10.130
.5964	9.563			.5314	10.029	.6795	10.142
.5973	9.550	2438407.4580	9.977	.5324	10.031	.6800	10.144
.5980	9.547	.4585	9.980	.5333	10.026	.6806	10.142
.5988	9.542	.4596	9.975	.5342	10.022	.6812	10.152
.5997	9.537	.4605	9.969	.5353	10.035	.6819	10.155

Table 4 – continued

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V
.6826	10.171	.3180	10.124	.3960	9.441	.5597	9.831
.6832	10.163	.3209	10.150	.3969	9.457	.5608	9.825
.6860	10.150	.3217	10.121	.3978	9.470	.5652	9.801
.6866	10.150	.3226	10.122	.3989	9.464	.5663	9.838
.6873	10.170	.3235	10.119	.3997	9.450	.5675	9.825
.6881	10.168	.3243	10.095	.4007	9.441	.5686	9.827
.6887	10.157	.3253	10.093	.4018	9.457	.5696	9.826
.6894	10.178	.3262	10.093	.4026	9.451	.5706	9.843
.6900	10.153	.3270	10.094	.4035	9.457	.5716	9.842
.6906	10.184	.3278	10.062	.4064	9.448	.5728	9.843
.6910	10.185	.3285	10.091	.4070	9.471	.5737	9.847
.6918	10.184	.3294	10.051	.4076	9.446	.5749	9.839
.6927	10.192	.3302	10.043	.4090	9.449	.5760	9.841
.6949	10.157	.3311	10.045	.4098	9.449	.5771	9.846
.6956	10.157	.3358	10.018	.4105	9.448	.5811	9.857
.6964	10.167	.3367	10.019	.4114	9.450	.5821	9.836
.6970	10.162	.3377	9.983	.4123	9.449	.5831	9.830
.6977	10.153	.3385	9.995	.4131	9.421	.5841	9.838
.6984	10.159	.3395	9.962	.4141	9.437	.5849	9.848
.6989	10.169	.3406	9.955	.4148	9.441	.5859	9.832
.6996	10.177	.3415	9.954	.4157	9.425	.5870	9.831
.7003	10.171	.3437	9.940	.4192	9.443	.5879	9.843
.7009	10.164	.3445	9.926	.4198	9.456	.5889	9.844
.7028	10.160	.3454	9.913	.4206	9.444	.5899	9.832
.7035	10.171	.3463	9.895	.4214	9.441	.5907	9.841
.7047	10.171	.3493	9.838	.4224	9.454	.5918	9.862
.7055	10.164	.3503	9.824	.4235	9.436	.5927	9.869
.7068	10.184	.3513	9.823	.4244	9.441	.5976	9.828
.7074	10.177	.3521	9.796	.4252	9.435	.5988	9.882
.7079	10.181	.3530	9.779	.4258	9.457	.5995	9.881
.7086	10.172	.3538	9.769	.4271	9.432	.6002	9.886
.7089	10.184	.3547	9.767	.4279	9.455	.6012	9.827
2438408.2868	10.181	.3556	9.755	.4286	9.451	.6025	9.841
.2876	10.176	.3566	9.734	.4293	9.453	.6043	9.852
.2883	10.172	.3576	9.724	.4322	9.492		
.2891	10.173	.3587	9.726	.4330	9.495	2438411.4154	9.506
.2898	10.171	.3596	9.716	.4337	9.519	.4163	9.507
.2906	10.196	.3625	9.716	.4345	9.515	.4172	9.529
.2913	10.168	.3634	9.712	.4361	9.503	.4189	9.507
.2921	10.181	.3643	9.720	.4369	9.504	.4191	9.513
.2929	10.160	.3652	9.705	.4377	9.533	.4203	9.525
.2938	10.178	.3660	9.707	.4384	9.530	.4213	9.533
.2948	10.142	.3669	9.692	.4392	9.520	.4222	9.540
.2958	10.167	.3680	9.683	.4400	9.519	.4231	9.522
.2966	10.171	.3690	9.674	.4407	9.512	.4242	9.521
.2976	10.148	.3701	9.684	.4414	9.541	.4251	9.531
.3022	10.113	.3712	9.678	.4421	9.535	.4261	9.534
.3033	10.131	.3722	9.710	.4428	9.555	.4299	9.566
.3058	10.131	.3772	9.657	.4435	9.542	.4307	9.576
.3064	10.138	.3782	9.650	.4443	9.533	.4314	9.575
.3074	10.156	.3795	9.639	.4451	9.533	.4321	9.579
.3083	10.156	.3804	9.650	.4460	9.549	.4330	9.581
.3091	10.148	.3815	9.620	.4470	9.550	.4337	9.591
.3099	10.141	.3826	9.612	.5485	9.837	.4346	9.589
.3109	10.141	.3835	9.600	.5494	9.833	.4354	9.595
.3118	10.140	.3847	9.620	.5505	9.834	.4365	9.581
.3126	10.133	.3856	9.605	.5514	9.832	.4375	9.589
.3134	10.140	.3867	9.580	.5524	9.827	.4384	9.592
.3143	10.141	.3874	9.580	.5532	9.836	.4393	9.590
.3153	10.128	.3918	9.471	.5550	9.860	.4440	9.596
.3162	10.103	.3926	9.494	.5560	9.849	.4449	9.586
.3171	10.122	.3939	9.474	.5574	9.842	.4460	9.587
		.3950	9.457	.5584	9.836	.4470	9.579

Table 4 – continued

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V
.4481	9.591	.3885	9.914	.4847	10.011	.6213	10.093
.4491	9.606	.3896	9.918	.4857	10.015	.6221	10.084
.4513	9.507	.3911	9.907	.4866	10.011	.6228	10.089
.4523	9.604	.3923	9.914	.4876	10.007	.6238	10.087
.4532	9.598	.3935	9.923	.4886	10.003	.6250	10.124
.4544	9.594	.3947	9.916	.4897	10.022	.6261	10.113
.4554	9.621	.3971	9.941	.4906	10.039	.6271	10.098
.4597	9.628	.3980	9.923	.4918	10.015	.6280	10.109
.4610	9.606	.3994	9.922	.4918	10.027	.6289	10.093
.4621	9.630	.4054	9.945	.4953	10.054	.6300	10.122
.4635	9.631	.4065	9.952	.4964	10.046	.6310	10.130
.4642	9.623	.4077	9.942	.4974	10.046	.6319	10.113
.4653	9.620	.4090	9.952	.5006	10.033	.6329	10.152
.4663	9.633	.4104	9.930	.5020	10.030	.6337	10.143
.4674	9.629	.4119	9.935	.5033	10.042	.6381	10.123
.4684	9.640	.4130	9.955	.5043	10.064	.6391	10.111
.4694	9.658	.4142	9.983	.5056	10.044	.6399	10.111
.4703	9.648	.4156	9.957	.5066	10.056	.6407	10.113
.4714	9.649	.4168	9.969	.5076	10.047	.6419	10.127
.4726	9.650	.4179	9.944	.5086	10.036	.6426	10.121
.4768	9.678	.4183	9.964	.5094	10.043	.6437	10.145
.4776	9.685	.4238	9.953	.5102	10.069	.6444	10.159
.4783	9.705	.4252	9.979	.5697	10.066	.6453	10.171
.4791	9.682	.4263	9.964	.5709	10.068	.6461	10.170
.4797	9.692	.4274	9.967	.5717	10.088	.6470	10.134
.4804	9.701	.4281	9.975	.5725	10.080	.6479	10.148
.4811	9.709	.4292	9.958	.5736	10.099	.6489	10.166
.4818	9.723	.4304	9.984	.5747	10.078	.6498	10.193
.4826	9.705	.4316	9.983	.5757	10.077	.6507	10.196
.4837	9.705	.4328	9.993	.5766	10.106	.6517	10.190
.4847	9.705	.4342	9.976	.5778	10.086	.6528	10.194
.4856	9.708	.4357	9.985	.5787	10.088	.6567	10.129
		.4371	9.993	.5795	10.093	.6578	10.142
2438413.2594	9.699	.4385	9.971	.5804	10.068	.6588	10.182
.2605	9.688	.4402	9.955	.5815	10.093	.6598	10.182
.2617	9.702	.4448	9.973	.5863	10.035	.6612	10.129
.2631	9.670	.4458	9.986	.5871	10.046	.6624	10.132
.2645	9.683	.4469	9.948	.5876	10.035	.6636	10.147
.2657	9.705	.4479	9.956	.5883	10.054	.6645	10.156
.2670	9.721	.4493	9.976	.5895	10.055	.6653	10.171
.2680	9.694	.4504	10.003	.5910	10.060	.6662	10.185
.2693	9.707	.4514	10.010	.5926	10.065	.6670	10.180
.2706	9.709	.4525	9.982	.5938	10.043	.6680	10.203
.2717	9.704	.4538	9.985	.5950	10.058	.6688	10.202
.2727	9.709	.4550	9.978	.5961	10.060	.6698	10.175
.2769	9.696	.4561	10.008	.5971	10.042	.6738	10.141
.2781	9.708	.4572	9.979	.5980	10.051	.6746	10.170
.2791	9.716	.4583	10.030	.5990	10.041	.6754	10.188
.2801	9.723	.4627	10.015	.5999	10.049	.6762	10.184
.2813	9.712	.4640	9.994	.6045	10.055	.6771	10.179
.2823	9.721	.4655	9.990	.6053	10.080	.6780	10.178
.2836	9.707	.4666	9.995	.6061	10.078	.6788	10.145
.2848	9.721	.4677	9.998	.6072	10.066	.6796	10.155
.2861	9.751	.4688	10.020	.6082	10.082	.6805	10.146
.2873	9.729	.4702	10.019	.6090	10.076	.6814	10.155
.2892	9.728	.4713	10.028	.6101	10.071	.6822	10.162
.2904	9.741	.4724	10.006	.6117	10.087	.6829	10.149
.2915	9.735	.4741	10.004	.6127	10.097	.6837	10.141
.2926	9.736	.4754	10.030	.6136	10.108	.6845	10.155
.3839	9.911	.4803	10.010	.6145	10.074	.6852	10.155
.3850	9.902	.4816	10.013	.6153	10.091	.6861	10.152
.3863	9.906	.4825	10.010	.6162	10.104	.6869	10.168
.3874	9.909	.4835	10.010	.6206	10.096		

Table 4 – continued

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V
2438414.2595	10.148	.3181	9.943	.4135	9.534	.5234	9.778
.2603	10.153	.3188	9.938	.4143	9.546	.5241	9.785
.2610	10.146	.3194	9.932	.4152	9.556	.5249	9.779
.2619	10.146	.3201	9.913	.4170	9.530	.5256	9.758
.2628	10.157	.3210	9.890	.4206	9.570	.5263	9.777
.2638	10.155	.3219	9.865	.4215	9.550	.5271	9.750
.2645	10.154	.3227	9.864	.4227	9.570	.5278	9.733
.2654	10.194	.3234	9.847	.4237	9.563	.5285	9.757
.2664	10.171	.3242	9.839	.4247	9.573	.5292	9.734
.2672	10.202	.3259	9.834	.4253	9.584	.5300	9.734
.2682	10.169	.3267	9.821	.4266	9.596	.5307	9.725
.2691	10.175	.3274	9.802	.4275	9.587	.5315	9.732
.2727	10.166	.3306	9.735	.4283	9.583	.5360	9.721
.2738	10.165	.3317	9.730	.4291	9.581	.5367	9.715
.2747	10.171	.3475	9.690	.4299	9.586	.5375	9.706
.2755	10.204	.3483	9.645	.4308	9.583	.5385	9.706
.2763	10.203	.3492	9.648	.4342	9.595	.5452	9.653
.2770	10.186	.3500	9.644	.4353	9.587	.5459	9.630
.2779	10.170	.3509	9.645	.4361	9.605	.5466	9.630
.2787	10.172	.3519	9.627	.4372	9.620	.5474	9.623
.2796	10.155	.3527	9.630	.4381	9.624	.5487	9.642
.2803	10.161	.3536	9.614	.4391	9.610	.5489	9.620
.2812	10.150	.3544	9.586	.4400	9.596	.5496	9.596
.2819	10.149	.3551	9.636	.4408	9.620	.5524	9.615
.2824	10.140	.3559	9.584	.4417	9.612	.5531	9.603
.2831	10.140	.3568	9.621	.4425	9.629	.5539	9.601
.2839	10.126	.3576	9.611	.4434	9.622	.5547	9.595
.2839	10.141	.3582	9.620	.4474	9.600	.5555	9.600
.2846	10.120	.3591	9.607	.4485	9.630	.5565	9.595
.2853	10.126	.3599	9.577	.4513	9.637	.5572	9.564
.2881	10.163	.3610	9.592	.4524	9.627	.5580	9.558
.2888	10.132	.3641	9.520	.4532	9.637	.5588	9.533
.2896	10.134	.3650	9.539	.4539	9.643	.5596	9.542
.2905	10.153	.3659	9.545	.4547	9.644	.5605	9.558
.2916	10.116	.3668	9.535	.4564	9.634	.5516	9.525
.2924	10.118	.3677	9.542	.4574	9.638	.5644	9.534
.2933	10.110	.3687	9.519	.4590	9.652	.5652	9.533
.2940	10.106	.3696	9.520	.4626	9.631	.5660	9.516
.2949	10.120	.3704	9.534	.4636	9.648	.5669	9.508
.2958	10.126	.3713	9.517	.4654	9.652	.5678	9.529
.2965	10.114	.3722	9.513	.4663	9.648	.5687	9.522
.2972	10.101	.3731	9.512	.4671	9.660	.5695	9.501
.2980	10.098	.3740	9.489	.4680	9.654	.5704	9.515
.2989	10.094	.3777	9.488	.4691	9.643	.5722	9.507
.2996	10.107	.3785	9.488	.4700	9.656	.5731	9.519
.3003	10.106	.3793	9.488	.4709	9.652	.5738	9.516
.3012	10.088	.3800	9.479	.4717	9.674	.5745	9.484
.3042	10.089	.3808	9.475	.4735	9.704	.5753	9.485
.3050	10.071	.3818	9.445	.4743	9.704	.5787	9.493
.3057	10.078	.3827	9.466			.5795	9.474
.3064	10.070	.3836	9.465	2438415.5111	9.949	.5803	9.472
.3072	10.045	.3844	9.469	.5118	9.933	.5812	9.474
.3080	10.042	.3853	9.473	.5126	9.929	.5820	9.493
.3087	10.027	.3863	9.451	.5135	9.900	.5830	9.483
.3095	10.045	.3874	9.457	.5142	9.897	.5838	9.483
.3102	10.019	.3882	9.463	.5150	9.895	.5847	9.474
.3109	10.018	.4067	9.504	.5159	9.890	.5855	9.483
.3116	10.013	.4075	9.511	.5167	9.886	.5864	9.491
.3124	10.019	.4086	9.507	.5175	9.880	.5873	9.498
.3132	9.983	.4097	9.517	.5184	9.847	.5882	9.488
.3140	9.984	.4109	9.534	.5191	9.833	.5924	9.509
		.4118	9.541	.5198	9.829	.5934	9.485
		.4125	9.540	.5226	9.806	.5944	9.500

Table 4 – continued.

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V
.5954	9.491	.6749	9.707	.4654	10.140	.5361	9.625
.5965	9.510	.6758	9.730	.4661	10.140	.5368	9.636
.5974	9.506	.6767	9.736	.4667	10.144	.5375	9.617
.5985	9.515	.6777	9.743	.4674	10.147	.5382	9.618
.5995	9.522	.6787	9.731	.4681	10.134	.5389	9.613
.6004	9.515	.6796	9.735	.4688	10.133	.5398	9.603
.6014	9.521			.4695	10.127	.5423	9.581
.6022	9.503	2438418.4175	10.096	.4703	10.124	.5431	9.571
.6032	9.529	.4185	10.099	.4709	10.137	.5439	9.561
.6053	9.532	.4193	10.104	.4716	10.133	.5473	9.542
.6070	9.521	.4203	10.102	.4744	10.138	.5479	9.546
.6079	9.518	.4210	10.100	.4751	10.140	.5487	9.544
.6088	9.536	.4218	10.112	.4758	10.140	.5493	9.520
.6095	9.539	.4225	10.101	.4765	10.127	.5502	9.518
.6103	9.527	.4232	10.104	.4772	10.125	.5511	9.510
.6112	9.541	.4239	10.113	.4779	10.122	.5516	9.509
.6122	9.539	.4244	10.114	.4786	10.120	.5522	9.513
.6135	9.544	.4249	10.116	.4795	10.114	.5529	9.503
.6145	9.565	.4255	10.124	.4800	10.122	.5535	9.501
.6155	9.535	.4261	10.118	.4807	10.115	.5543	9.498
.6164	9.558	.4277	10.115	.4814	10.109	.5551	9.501
.6208	9.577	.4295	10.121	.4821	10.086	.5564	9.500
.6217	9.583	.4302	10.116	.4828	10.099	.5570	9.496
.6227	9.565	.4309	10.117	.4835	10.094	.5577	9.492
.6236	9.565	.4316	10.120	.4842	10.086	.5605	9.491
.6246	9.565	.4324	10.110	.4869	10.083	.5611	9.486
.6257	9.582	.4331	10.124	.4876	10.089	.5619	9.491
.6264	9.584	.4337	10.135	.4882	10.084	.5626	9.483
.6274	9.591	.4344	10.121	.4895	10.061	.5632	9.485
.6284	9.591	.4352	10.124	.4903	10.053	.5639	9.480
.6293	9.593	.4359	10.128	.4910	10.046	.5646	9.484
.6302	9.608	.4366	10.134	.4918	10.036	.5653	9.488
.6312	9.610	.4393	10.146	.4924	10.024	.5660	9.485
.6350	9.602	.4401	10.159	.4931	10.028	.5667	9.485
.6360	9.620	.4408	10.155	.4938	10.018	.5674	9.492
.6368	9.639	.4415	10.149	.4946	10.009	.5681	9.486
.6379	9.638	.4422	10.159	.4952	10.007	.5688	9.482
.6390	9.624	.4429	10.161	.4960	9.990	.5715	9.484
.6401	9.617	.4436	10.164	.4990	9.953	.5722	9.488
.6415	9.635	.4443	10.165	.5001	9.936	.5730	9.494
.6427	9.619	.4451	10.164	.5006	9.928	.5737	9.492
.6436	9.642	.4457	10.156	.5013	9.927	.5745	9.492
.6445	9.636	.4464	10.170	.5021	9.919	.5751	9.500
.6455	9.643	.4471	10.163	.5028	9.902	.5757	9.495
.6543	9.686	.4499	10.138	.5035	9.890	.5766	9.489
.6553	9.680	.4507	10.150	.5077	9.836	.5773	9.598
.6562	9.678	.4514	10.156	.5084	9.829	.5778	9.508
.6572	9.681	.4521	10.157	.5092	9.821	.5785	9.495
.6581	9.684	.4527	10.156	.5098	9.805	.5792	9.512
.6590	9.701	.4535	10.154	.5105	9.801	.5821	9.510
.6600	9.712	.4544	10.156	.5112	9.806	.5829	9.513
.6609	9.699	.4548	10.162	.5119	9.783	.5835	9.521
.6618	9.712	.4555	10.162	.5126	9.774	.5841	9.521
.6630	9.698	.4563	10.162	.5133	9.766	.5849	9.520
.6640	9.706	.4569	10.160	.5140	9.764	.5856	9.528
.6649	9.693	.4576	10.155	.5147	9.751	.5863	9.529
.6658	9.718	.4584	10.168	.5313	9.676	.5870	9.533
.6690	9.705	.4591	10.167	.5320	9.660	.5876	9.533
.6699	9.715	.4597	10.166	.5327	9.652	.5883	9.533
.6709	9.705	.4625	10.155	.5334	9.643	.5890	9.531
.6719	9.724	.4634	10.156	.5340	9.644	.5896	9.546
.6732	9.734	.4639	10.147	.5348	9.634	.6313	9.654
.6740	9.721	.4647	10.143	.5354	9.637	.6321	9.675

Table 4 – continued

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V
.6328	9.654	2438458.3208	10.049	.3982	10.035	.4844	10.130
.6334	9.652	.3216	10.046	.3995	10.049	.4852	10.148
.6342	9.658	.3225	10.047	.4006	10.037	.4860	10.156
.6348	9.658	.3234	10.036	.4017	10.037	.4870	10.137
.6355	9.658	.3244	10.046	.4029	10.046	.4880	10.153
.6363	9.673	.3258	10.060	.4040	10.039	.4891	10.135
.6369	9.674	.3269	10.052	.4076	10.045	.4935	10.134
.6376	9.661	.3280	10.040	.4089	10.046	.4947	10.113
.6383	9.674	.3290	10.056	.4101	10.046	.4962	10.138
.6390	9.676	.3299	10.069	.4111	10.042	.4977	10.149
.6396	9.666	.3308	10.066	.4121	10.060	.4989	10.137
.6425	9.678	.3318	10.055	.4131	10.058	.5000	10.163
.6432	9.688	.3329	10.071	.4142	10.069	.5014	10.169
.6438	9.689	.3338	10.051	.4152	10.082	.5030	10.166
.6448	9.682	.3384	10.062	.4164	10.091	.5042	10.121
.6454	9.674	.3395	10.031	.4174	10.070	.5051	10.120
.6459	9.679	.3406	10.046	.4183	10.078	.5061	10.123
.6466	9.680	.3415	10.041	.4190	10.069	.5070	10.125
.6474	9.693	.3428	10.051	.4202	10.075	.5079	10.115
.6480	9.689	.3435	10.059	.4211	10.080	.5087	10.144
.6487	9.693	.3442	10.047	.4219	10.081	.5097	10.118
.6493	9.691	.3448	10.055	.4228	10.086	.5137	10.089
.6500	9.691	.3455	10.044	.4425	10.078	.5146	10.085
.6508	9.695	.3462	10.052	.4433	10.076	.5154	10.077
.6514	9.697	.3468	10.058	.4449	10.092	.5164	10.071
.6542	9.699	.3499	10.043	.4462	10.086	.5180	10.061
.6549	9.692	.3508	10.042	.4474	10.097	.5189	10.055
.6556	9.696	.3518	10.056	.4486	10.111	.5199	10.054
.6562	9.698	.3528	10.046	.4494	10.122	.5208	10.044
.6569	9.705	.3537	10.046	.4504	10.131	.5217	10.051
.6576	9.705	.3545	10.038	.4514	10.125	.5226	10.041
.6584	9.708	.3555	10.043	.4522	10.131	.3615	10.235
.6592	9.705	.3567	10.054	.4535	10.135	.3622	10.222
.6597	9.714	.3578	10.041	.4541	10.121	.3629	10.221
.6604	9.704	.3588	10.046	.4549	10.124	.3637	10.230
.6611	9.705	.3600	10.040	.4555	10.130	.3643	10.230
.6619	9.712	.3613	10.031	.4562	10.121	.3650	10.234
.6645	9.705	.3625	10.040	.4569	10.126	.3685	10.278
.6652	9.705	.3636	10.051	.4600	10.132	.3693	10.272
.6660	9.716	.3682	10.061	.4608	10.140	.3699	10.275
.6665	9.717	.3691	10.058	.4617	10.140	.3706	10.268
.6674	9.714	.3701	10.068	.4628	10.153	.3713	10.273
.6681	9.710	.3710	10.053	.4637	10.144	.3720	10.264
.6688	9.725	.3717	10.053	.4646	10.152	.3727	10.268
.6695	9.723	.3725	10.056	.4653	10.159	.3734	10.273
.6701	9.722	.3733	10.060	.4660	10.144	.3741	10.265
.6708	9.730	.3744	10.060	.4669	10.148	.3748	10.261
.6715	9.729	.3755	10.059	.4679	10.145	.4039	10.335
.6722	9.730	.3764	10.063	.4705	10.140	.4047	10.349
.6751	9.735	.3774	10.052	.4714	10.150	.4054	10.352
.6757	9.739	.3785	10.062	.4721	10.142	.4061	10.335
.6763	9.739	.3796	10.069	.4755	10.146	.4082	10.358
.6771	9.740	.3807	10.056	.4761	10.147	.4088	10.342
.6777	9.732	.3818	10.061	.4768	10.142	.4095	10.358
.6785	9.736	.3880	10.047	.4775	10.152	.4103	10.366
.6792	9.734	.3892	10.044	.4782	10.148	.4137	10.350
.6797	9.742	.3905	10.043	.4789	10.150	.4144	10.385
.6805	9.746	.3916	10.056	.4796	10.151	.4151	10.361
.6813	9.748	.3928	10.046	.4803	10.149	.4158	10.369
.6819	9.744	.3939	10.057	.4810	10.167	.4165	10.369
.6826	9.753	.3949	10.062	.4819	10.148	.4172	10.376
.6832	9.754	.3960	10.050	.4826	10.143	.4179	10.386
		.3970	10.034	.4835	10.139	.4186	10.370

Table 4 – continued

J. D. _{hel}	B	J. D. _{hel}	B	J. D. _{hel}	B	J. D. _{hel}	B
.4193	10.380	.4937	9.986	.2785	10.295	.3571	10.458
.4200	10.357	.4947	10.018	.2792	10.303	.3602	10.452
.4207	10.351			.2800	10.315	.3609	10.459
.4268	10.365	2439498.3929	10.433	.2831	10.329	.3617	10.455
.4277	10.393	.3934	10.435	.2840	10.329	.3625	10.459
.4282	10.375	.3980	10.437	.2849	10.321	.3633	10.456
.4290	10.356	.3996	10.447	.2855	10.325	.3540	10.458
.4296	10.386	.4012	10.457	.2862	10.327	.3647	10.505
.4303	10.397	.4025	10.454	.2868	10.331	.3758	10.480
.4310	10.390	.4071	10.477	.2876	10.335	.3764	10.471
.4317	10.377	.4082	10.471	.2883	10.330	.3771	10.465
.4324	10.371	.4096	10.465	.2890	10.323	.3792	10.475
.4331	10.368	.4107	10.479	.2898	10.345	.3799	10.467
.4351	10.411	.4122	10.481	.2906	10.302	.3806	10.452
.4359	10.379	.4135	10.496	.2936	10.348	.3814	10.465
.4366	10.390	.4149	10.503	.2944	10.353	.3856	10.456
.4373	10.385	.4244	10.497	.2952	10.348	.3868	10.468
.4380	10.391	.4255	10.513	.2959	10.365	.3876	10.459
.4387	10.376	.4285	10.523	.2966	10.364	.3884	10.471
.4393	10.373	.4291	10.524	.2972	10.365	.3892	10.464
.4400	10.395			.2980	10.373	.3900	10.458
.4408	10.394	2439509.3239	10.524	.2988	10.358	.3908	10.462
.4415	10.393	.3246	10.530	.2996	10.355	.3917	10.465
.4421	10.401	.3255	10.535	.3003	10.365	.3925	10.463
.4478	10.423	.3263	10.546	.3041	10.387	.3932	10.494
.4514	10.421	.3271	10.532	.3048	10.369	.3939	10.486
.4521	10.450	.3278	10.538	.3055	10.385	.4079	10.484
.4529	10.403	.3316	10.544	.3062	10.388	.4086	10.485
.4536	10.439	.3327	10.550	.3070	10.377	.4092	10.498
.4543	10.448	.3334	10.543	.3078	10.403	.4100	10.498
.4550	10.468	.3343	10.544	.3086	10.399	.4107	10.500
.4557	10.463	.3350	10.543	.3094	10.398	.4114	10.492
.4579	10.434	.3357	10.541	.3101	10.393	.5237	10.005
.4608	10.433	.3365	10.550	.3108	10.417	.5248	9.986
.4615	10.435	.3374	10.545	.3156	10.395	.5257	9.983
.4622	10.447	.3381	10.581	.3164	10.401	.5267	9.971
.4637	10.439	.3390	10.587	.3171	10.395	.5277	9.955
		.3397	10.596	.3179	10.395	.5314	9.880
2439387.3909	9.718	.3411	10.595	.3189	10.415	.5323	9.869
.3938	9.713	.3445	10.546	.3196	10.413	.5333	9.858
.3953	9.723	.3454	10.552	.3203	10.422	.5341	9.846
.3966	9.775	.3461	10.547	.3213	10.405	.5350	9.847
.4033	9.786	.3468	10.542	.3221	10.416	.5358	9.832
.4043	9.837	.3475	10.559	.3229	10.412	.5371	9.827
.4052	9.756	.3482	10.581	.3262	10.453	.5381	9.831
.4060	9.765	.3489	10.587	.3270	10.445	.5389	9.779
.4068	9.769	.3497	10.580	.3278	10.453	.5399	9.764
.4077	9.778	.3504	10.586	.3285	10.449	.5408	9.767
.4201	9.831			.3292	10.465	.5417	9.756
.4236	9.903	2439510.2581	10.265	.3299	10.419	.5427	9.755
.4248	9.892	.2590	10.278	.3306	10.419	.5437	9.764
.4315	9.877	.2598	10.279	.3312	10.423	.5444	9.764
.4440	9.912	.2609	10.272	.3319	10.425	.5490	9.710
.4461	9.906	.2619	10.271	.3326	10.434	.5500	9.696
.4504	9.923	.2628	10.270	.3495	10.449	.5509	9.705
.4844	9.939	.2636	10.259	.3505	10.452	.5523	9.716
.4854	10.008	.2733	10.292	.3513	10.449	.5538	9.713
.4866	9.991	.2741	10.285	.3521	10.447	.5547	9.670
.4876	9.970	.2749	10.293	.3530	10.451	.5555	9.674
.4889	9.988	.2756	10.329	.3539	10.456	.5563	9.655
.4899	9.957	.2764	10.295	.3547	10.446	.5576	9.661
.4911	9.997	.2771	10.295	.3555	10.463	.5590	9.669
.4927	10.033	.2779	10.304	.3563	10.453	.5597	9.669

Table 4 - continued

J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V	J. D. _{hel}	V
.5608	9.658	.6458	9.648	.6016	10.117	.5541	9.841
.5618	9.662	.6472	9.661	.6026	10.105	.5553	9.840
.5624	9.657	.6503	9.666	.6034	10.104	.5562	9.829
.5631	9.652			.6046	10.094	.5574	9.829
.5639	9.667	2438670.5053	10.080	.6056	10.083	.5586	9.841
.5677	9.644	.5066	10.048	.6065	10.071	.5593	9.846
.5686	9.555	.5079	10.033	.6072	10.053	.5602	9.849
.5696	9.564	.5091	10.052	.6080	10.046	.5609	9.852
.5705	9.575	.5105	10.037	.6088	10.046		
.5715	9.556	.5116	10.046	.6098	10.009		
.5726	9.569	.5126	10.050	.6112	10.013		
.5740	9.570	.5140	10.052	.6121	10.002		
.5750	9.564	.5154	10.055	.6130	10.000	2439483.3353	10.160
.5762	9.536	.5168	10.053	.6140	10.987	.3360	10.197
.5775	9.532	.5183	10.050	.6151	10.966	.3367	10.148
.5790	9.539	.5195	10.088	.6163	9.943	.3374	10.169
.5800	9.535	.5246	10.066			.3381	10.183
.5808	9.530	.5257	10.080	2438736.5014	9.707	.3388	10.184
.5817	9.526	.5269	10.046	.5022	9.732	.3394	10.173
.5827	9.520	.5277	10.078	.5029	9.736	.3401	10.179
.5892	9.475	.5292	10.081	.5037	9.736	.3408	10.186
.5901	9.478	.5303	10.089	.5044	9.737	.3414	10.180
.5912	9.483	.5316	10.068	.5053	9.739	.3422	10.174
.5922	9.500	.5328	10.081	.5064	9.722	.3471	10.154
.5934	9.497	.5503	10.115	.5072	9.730	.3477	10.173
.5945	9.497	.5512	10.102	.5081	9.733	.3485	10.154
.5959	9.477	.5521	10.122	.5088	9.736	.3492	10.160
.5972	9.492	.5530	10.132	.5117	9.751	.3498	10.174
.5987	9.479	.5541	10.134	.5125	9.760	.3506	10.177
.6003	9.498	.5554	10.140	.5134	9.748	.3512	10.174
.6014	9.509	.5567	10.129	.5143	9.767	.3512	10.174
.6055	9.496	.5580	10.129	.5154	9.766	.3588	10.215
.6064	9.500	.5591	10.127	.5164	9.766	.3595	10.211
.6075	9.516	.5604	10.130	.5174	9.764	.3601	10.217
.6084	9.513	.5612	10.122	.5183	9.763	.3608	10.228
.6092	9.522	.5624	10.124	.5192	9.768	.4121	10.499
.6103	9.521	.5633	10.121	.5204	9.774	.4128	10.504
.6140	9.511	.5684	10.158	.5213	9.784	.4135	10.515
.6150	9.512	.5692	10.138	.5232	9.783	.4142	10.502
.6161	9.520	.5701	10.139	.5269	9.780	.4170	10.487
.6173	9.533	.5711	10.143	.5277	9.777	.4178	10.494
.6181	9.549	.5723	10.149	.5286	9.773	.4186	10.492
.6191	9.527	.5734	10.135	.5297	9.784	.4194	10.494
.6229	9.525	.5745	10.142	.5306	9.783	.4201	10.504
.6241	9.549	.5757	10.132	.5316	9.783	.4209	10.503
.6252	9.557	.5765	10.134	.5325	9.785	.4217	10.515
.6263	9.569	.5777	10.155	.5335	9.783	.4224	10.511
.6275	9.550	.5787	10.132	.5344	9.790	.4233	10.527
.6284	9.563	.5801	10.137	.5352	9.784	.4242	10.524
.6295	9.554	.5844	10.186	.5388	9.795	.4276	10.523
.6309	9.558	.5854	10.186	.5397	9.793	.4283	10.527
.6319	9.565	.5867	10.167	.5406	9.794	.4291	10.527
.6330	9.582	.5878	10.183	.5415	9.804	.4303	10.528
.6339	9.592	.5890	10.181	.5425	9.823	.4311	10.521
.6344	9.589	.5904	10.171	.5434	9.777	.4318	10.520
.6350	9.597	.5912	10.160	.5445	9.837	.4332	10.516
.6367	9.599	.5921	10.154	.5454	9.820	.4340	10.516
.6390	9.575	.5934	10.140	.5464	9.823	.4348	10.515
.6401	9.604	.5942	10.140	.5473	9.829	.4383	10.514
.6411	9.623	.5950	10.127	.5484	9.822	.4391	10.506
.6422	9.623	.5960	10.127	.5519	9.842	.4399	10.503
.6437	9.618	.5970	10.122	.5531	9.816	.4406	10.513
.6448	9.650	.5978	10.105			.4415	10.511
						.4423	10.506

Table 4 – continued:

J. D. _{hel}	B	J. D. _{hel}	B	J. D. _{hel}	B	J. D. _{hel}	B
.4431	10.486	.5896	10.546	2439529.2293	9.849	.2932	10.043
.4440	10.502	.5903	10.538	.2302	9.852	.2939	10.041
.4450	10.504	.5911	10.566	.2310	9.844	.2970	10.050
.4460	10.504	.5920	10.532	.2317	9.841	.2978	10.041
.4510	10.515	.6125	10.264	.2325	9.828	.2985	10.080
.4518	10.513	.6135	10.261	.2333	9.843	.2992	10.039
.4527	10.518	.6142	10.240	.2340	9.851	.2999	10.046
.4536	10.516	.6149	10.235	.2348	9.855	.3006	10.060
.4543	10.516	.6157	10.225	.2355	9.839	.3015	10.061
.4551	10.513	.6164	10.221	.2361	9.827	.3022	10.070
.4559	10.512	.6180	10.159	.2367	9.844	.3027	10.060
.4566	10.511	.6189	10.138	.2374	9.831	.3034	10.088
.4573	10.511	.6197	10.124	.2401	9.851	.3041	10.089
.4582	10.520	.6204	10.108	.2409	9.858	.3048	10.101
.4615	10.487	.6233	10.045	.2417	9.850	.3097	10.123
.4621	10.487	.6241	10.045	.2424	9.873	.3104	10.115
.4629	10.491	.6249	10.028	.2448	9.851	.3111	10.129
.4638	10.493	.6256	10.025	.2456	9.860	.3118	10.124
.4645	10.480	.6262	10.030	.2463	9.868	.3125	10.125
.4653	10.483	.6270	10.036	.2469	9.906	.3134	10.127
.4661	10.474	.6276	10.027	.2476	9.905	.3141	10.138
.4670	10.475	.6283	10.031	.2490	9.921	.3148	10.130
.4678	10.484	.6292	10.037	.2521	9.906	.3155	10.130
.4686	10.484	.6311	10.003	.2527	9.908	.3162	10.122
.5268	10.538	.6321	9.892	.2534	9.916	.3189	10.137
.5275	10.546	.6329	10.038	.2541	9.898	.3197	10.135
.5403	10.611	.6339	9.995	.2548	9.913	.3204	10.130
.5410	10.567	.6346	9.989	.2556	9.924	.3211	10.155
.5417	10.580	.6356	9.991	.2562	9.909	.3218	10.153
.5423	10.595	.6363	9.986	.2569	9.934	.3225	10.143
.5430	10.628	.6397	9.963	.2576	9.907	.3234	10.162
.5437	10.628	.6404	9.977	.2583	9.906	.3241	10.169
.5475	10.581	.6415	9.958	.2590	9.904	.3249	10.170
.5483	10.596	.6422	9.964	.2598	9.921	.3256	10.185
.5617	10.586	.6429	9.970	.2608	9.912	.3263	10.141
.5624	10.576	.6454	9.937	.2613	9.923	.3292	10.149
.5633	10.578	.6473	9.895	.2645	9.946	.3299	10.143
.5641	10.578	.6483	9.863	.2652	9.947	.3306	10.152
.5648	10.591	.6543	9.841	.2662	9.968	.3314	10.150
.5656	10.592	.6556	9.784	.2673	9.970	.3322	10.163
.5663	10.592	.6566	9.795	.2680	9.954	.3329	10.180
.5671	10.589	.6576	9.795	.2686	9.974	.3336	10.172
.5678	10.589	.6581	9.762	.2694	9.949	.3342	10.193
.5685	10.604	.6593	9.764	.2702	9.962	.3356	10.033
.5717	10.611	.6615	9.731	.2708	9.954	.5158	10.033
.5724	10.566	.6660	9.731	.2715	9.945	.5166	10.028
.5731	10.587	.6772	9.726	.2750	9.968	.5175	10.024
.5739	10.581	.6781	9.739	.2757	10.007	.5184	10.025
.5759	10.559	.6791	9.740	.2764	10.011	.5194	10.023
.5764	10.562	.6799	9.744	.2792	9.970	.5204	10.012
.5774	10.569	.6807	9.736	.2792	10.004	.5213	10.008
.5781	10.569	.6816	9.717	.2854	10.012	.5224	10.015
.5790	10.573	.6827	9.740	.2860	10.012	.5236	10.008
.5798	10.573	.6836	9.734	.2867	9.996	.5266	9.999
.5799	10.570	.6847	9.709	.2875	10.009	.5274	9.987
.5798	10.566	.6847	9.709	.2875	10.009	.5283	9.973
.5806	10.573	.6884	9.716	.2882	10.022		
.5814	10.583	.6907	9.716	.2889	10.046		
.5843	10.605	.6921	9.730	.2896	10.029		
.5853	10.574	.6932	9.770	.2903	10.047		
.5859	10.574	.6944	9.775	.2910	10.026		
.5866	10.588	.6976	9.754	.2917	10.025		
.5888	10.550	.6986	9.779	.2924	10.027		
		.6994	9.763				

Table 4 - continued

J. D. hel	B	J. D. hel	B	J. D. hel	B	J. D. hel	B
.5298	9.961	.2581	9.986	.2712	9.726	.3526	10.002
.5317	9.953	.2588	9.972	.2720	9.743	.3533	10.017
.5327	9.932	.2598	9.988	.2727	9.737	.3610	9.994
.5337	9.935	.2606	9.973	.2760	9.742	.3625	10.004
.5347	9.913	.2614	9.972	.2766	9.749	.3632	10.013
.5357	9.908	.2623	9.978	.2774	9.714	.3638	10.026
.5366	9.901	.2632	9.997	.2782	9.747	.3643	10.033
.5377	9.887	.2663	9.969	.2792	9.765	.3649	10.053
.5388	9.856	.2672	9.960	.2800	9.777	.3656	10.035
.5400	9.861	.2681	9.937	.2807	9.778	.3661	10.050
.5441	9.825	.2690	9.936	.2814	9.778	.3667	10.050
.5453	9.811	.2700	9.949	.2821	9.765	.3674	10.078
.5466	9.812	.2708	9.933	.2828	9.778		
.5475	9.807	.2717	9.939	.2835	9.764	2439576.3129	10.515
.5486	9.796	.2726	9.935	.2843	9.759	.3146	10.528
.5495	9.805	.2737	9.955	.2883	9.733	.3152	10.578
.5505	9.762	.2747	9.911	.2914	9.823	.3160	10.517
.5515	9.767	.2758	9.902	.2923	9.837	.3167	10.543
.5525	9.757	.2790	9.874	.2933	9.820	.3174	10.520
.5536	9.751	.2799	9.862	.2943	9.816	.3181	10.525
.5545	9.754	.2809	9.862	.2951	9.814	.3188	10.501
.5556	9.758	.2820	9.849	.2961	9.804	.3195	10.469
.5600	9.733	.2834	9.836	.2970	9.817	.3202	10.492
.5612	9.735	.2843	9.827	.2983	9.859	.3232	10.470
.5622	9.736	.2854	9.820	.2995	9.843	.3239	10.426
.5631	9.745	.2866	9.797	.3009	9.849	.3246	10.453
.5640	9.745	.2876	9.789	.3102	9.886	.3260	10.394
.5648	9.747	.2885	9.789	.3115	9.895	.3267	10.368
.5656	9.740	.2896	9.795	.3125	9.871	.3276	10.441
.5664	9.740	.2907	9.778	.3134	9.880	.3283	10.403
.5671	9.744	.2943	9.782	.3142	9.862	.3290	10.331
.5679	9.751	.2949	9.752	.3150	9.862	.3297	10.349
		.2956	9.731	.3158	9.873	.3322	10.245
2439548.3031	9.795	.2962	9.720	.3192	9.891	.3330	10.256
.3040	9.761	.2968	9.731	.3200	9.895	.3336	10.218
.3048	9.763	.2997	9.712	.3207	9.897	.3344	10.269
.3055	9.790	.3005	9.705	.3214	9.906	.3351	10.242
.3063	9.809	.3085	9.707	.3221	9.906	.3358	10.217
.3071	9.751	.3093	9.713	.3230	9.906	.3365	10.214
.3080	9.764	.3099	9.716	.3237	9.908		
.3088	9.727	.3108	9.715	.3248	9.911	2439598.3448	10.528
.3095	9.722	.3114	9.723	.3260	9.930	.3459	10.512
.3105	9.735	.3121	9.729	.3269	9.930	.3467	10.501
.3114	9.736	.3128	9.728	.3318	9.959	.3475	10.474
.3125	9.761	.3136	9.718	.3330	9.954	.3482	10.507
.3159	9.748	.3144	9.714	.3339	9.979	.3489	10.516
.3167	9.767	.3154	9.720	.3364	9.966	.3496	10.516
.3176	9.739	.3221	9.747	.3371	9.978	.3503	10.512
.3185	9.752	.3228	9.753	.3379	9.979	.3510	10.509
.3201	9.730	.3237	9.753	.3386	9.981	.3517	10.498
.3209	9.743	.3244	9.747	.3394	9.987	.3525	10.495
.3221	9.751	.3251	9.752	.3401	9.978	.3557	10.558
.3240	9.732	.3258	9.758	.3409	9.975	.3565	10.523
.3290	9.760	.3264	9.756	.3418	9.997	.3572	10.492
.3310	9.744	.3271	9.753	.3449	10.006	.3579	10.515
.3317	9.725			.3458	10.012	.3586	10.529
.3326	9.744	2439560.2653	9.729	.3468	9.999	.3593	10.533
.3334	9.761	.2663	9.734	.3476	10.009	.3600	10.538
		.2674	9.720	.3484	10.003	.3607	10.576
2439551.2553	10.005	.2683	9.723	.3491	10.012	.3614	10.549
.2563	10.001	.2691	9.722	.3498	10.010	.3621	10.550
.2572	9.990	.2698	9.721	.3511	10.018	.3647	10.575
		.2705	9.721	.3519	10.012	.3654	10.546

Table 4 - continued

J. D. _{hel}	B	J. D. _{hel}	B	J. D. _{hel}	U	J. D. _{hel}	U
.3662	10.535	.2506	9.946	.3681	10.149	.4863	10.356
.3668	10.523	.2514	9.962	.3689	10.150	.4872	10.371
.3676	10.607	.2533	9.962	.3699	10.146	.4881	10.377
.3683	10.615	.2540	9.946	.3736	10.146	.4888	10.369
.3692	10.600	.2549	9.911	.3743	10.150	.4897	10.381
.3699	10.568	.2557	9.929	.3751	10.137	.4993	10.420
.3706	10.575	.2668	9.877	.3758	10.124	.5000	10.394
.3713	10.570	.2676	9.871	.3770	10.118	.5010	10.417
		.2731	9.900	.3808	10.187	.5017	10.397
2439611.3663	10.489	.2736	9.951	.3816	10.173	.5024	10.437
.3680	10.480	.2744	9.905	.3822	10.160	.5030	10.411
.3687	10.478	.2752	9.906	.3830	10.165	.5044	10.408
.3695	10.484	.2759	9.914	.3837	10.153	.5083	10.420
.3702	10.475	.2768	9.850	.3844	10.146	.5098	10.445
.4574	10.511	.2845	9.885	.3907	10.196	.5104	10.425
.4584	10.480	.2871	9.880	.3916	10.212	.5111	10.432
.4592	10.486	.2879	9.877	.3922	10.181	.5115	10.462
.4604	10.505	.2887	9.877	.3928	10.176	.5121	10.487
.4615	10.460	.3134	10.008	.3935	10.185	.5129	10.478
.4624	10.507	.3140	9.982	.3945	10.202	.5135	10.436
.4635	10.473	.3148	9.993	.3952	10.177	.5151	10.442
.4645	10.519	.3155	10.007	.3961	10.201	.6016	10.501
.4657	10.473	.3164	10.004	.3969	10.222	.6025	10.471
.4667	10.509	.3174	9.994	.3976	10.197	.6036	10.486
.4680	10.514	.3181	9.989	.3986	10.187	.6045	10.523
.4693	10.515	.3188	9.976	.4113	10.306	.6054	10.529
.4703	10.500	.3197	9.961	.4120	10.305	.6063	10.493
.4709	10.505	.3234	10.049	.4127	10.287	.6070	10.510
		.3243	10.064	.4200	10.298	.6078	10.475
2439623.3930	10.477	.3252	10.043	.4208	10.301	.6087	10.487
.3937	10.492	.3261	10.048	.4216	10.323	.6095	10.493
.3945	10.498	.3269	10.026	.4224	10.314	.6109	10.499
.3952	10.456	.3287	10.038	.4231	10.312	.6150	10.513
.3967	10.484	.3295	10.066	.4240	10.289	.6157	10.493
.3976	10.476	.3302	10.070	.4248	10.277	.6165	10.534
.3983	10.496	.3309	10.059	.4256	10.296	.6181	10.498
.3991	10.488	.3318	10.032	.4333	10.293	.6192	10.504
.3998	10.471	.3353	10.088	.4352	10.310	.6202	10.528
.4015	10.493	.3362	10.059	.4359	10.305	.6225	10.533
.4022	10.477	.3372	10.051	.4584	10.397	.6264	10.493
.4028	10.482	.3382	10.094	.4592	10.422	.6281	10.524
.4035	10.466	.3392	10.085	.4600	10.381	.6289	10.517
.4044	10.462	.3400	10.087	.4635	10.406		
		.3407	10.073	.4642	10.417	2439514.5114	10.491
Ultra violet observations		.3416	10.074	.4650	10.405	.5128	10.465
		.3423	10.074	.4657	10.384	.5134	10.470
2439501.4876	10.535	.3432	10.100	.4665	10.406	.5145	10.441
.4890	10.508	.3469	10.113	.4672	10.403	.5152	10.479
.4937	10.505	.3515	10.095	.4679	10.418	.5159	10.445
.4947	10.493	.3524	10.093	.4686	10.406	.5166	10.449
.4956	10.502	.3532	10.091	.4694	10.425	.5172	10.474
.4967	10.533	.3542	10.099	.4703	10.365	.5221	10.451
.4977	10.523	.3553	10.089	.4740	10.393	.5249	10.485
.4987	10.558	.3560	10.074	.4747	10.379	.5256	10.454
.5005	10.518	.3569	10.110	.4757	10.407	.5263	10.476
.5014	10.519	.3610	10.120	.4767	10.385	.5269	10.509
.5024	10.529	.3619	10.130	.4774	10.411	.5276	10.459
.5034	10.553	.3630	10.125	.4788	10.425	.5297	10.471
.5043	10.523	.3643	10.127	.4794	10.424	.5304	10.477
.5054	10.524	.3652	10.130	.4801	10.416	.5311	10.475
		.3660	10.122	.4809	10.406	.5318	10.495
2439511.2487	9.929	.3668	10.113	.4846	10.392	.5325	10.486
.2498	9.937	.3674	10.145	.4856	10.383	.5332	10.504

Table 4 – continued

J. D. _{hel}	U	J. D. _{hel}	U	J. D. _{hel}	U	J. D. _{hel}	U
.5339	10.509	.5420	10.093	.4201	10.619	.5005	10.213
.5346	10.486	.5427	10.116	.4211	10.643	.5014	10.171
.5352	10.541	.5437	10.164	.4220	10.637	.5022	10.173
.5360	10.476	.5445	10.125	.4228	10.613	.5029	10.181
.5408	10.493	.5451	10.146	.4268	10.577		
.5415	10.508	.5463	10.194	.4277	10.575	2439576.3443	10.198
.5422	10.481	.5475	10.120	.4286	10.579	.3450	10.163
.5429	10.489	.5481	10.131	.4293	10.581	.3457	10.153
.5445	10.493	.5570	10.153	.4324	10.576	.3464	10.153
.5453	10.495	.5581	10.177	.4334	10.625	.3471	10.139
.5461	10.513	.5589	10.145	.4344	10.611	.3506	10.153
.5469	10.507	.5600	10.129	.4354	10.595	.3513	10.166
.5489	10.539	.5609	10.170	.4395	10.602	.3523	10.179
.5499	10.536	.5620	10.089	.4438	10.609	.3530	10.189
.5507	10.494	.5626	10.082	.4446	10.643	.3540	10.125
.5514	10.504	.5639	10.026	.4456	10.611	.3554	10.106
.5520	10.529	.5647	10.054	.4463	10.610	.3568	10.163
		.5657	9.987	.4472	10.626	.3575	10.157
2439522.2452	10.375	.5665	9.986	.4511	10.618	.3582	10.153
.2468	10.399			.4520	10.609	.3673	10.096
.2476	10.399	2239529.3415	10.313	.4529	10.611	.3682	10.084
.2484	10.386	.3422	10.252	.4539	10.656	.3689	10.081
.2492	10.415	.3429	10.290	.4549	10.624	.3696	10.103
.2500	10.434	.3436	10.293	.4558	10.636	.3724	10.015
.2513	10.441	.3462	10.299	.4567	10.603	.3731	10.059
.2521	10.381	.3469	10.263	.4578	10.618	.3738	10.038
.2530	10.387	.3513	10.314	.4588	10.626	.3960	9.923
.2568	10.391	.3567	10.370	.4598	10.605	.3967	9.924
.2577	10.400			.4637	10.621	.3974	9.920
.2584	10.463	2439537.3720	10.384	.4646	10.629	.3981	9.950
.2605	10.456	.3728	10.516	.4656	10.600	.3988	9.957
.2614	10.466	.3737	10.495	.4664	10.636	.3995	9.955
.2622	10.417	.3748	10.527	.4675	10.635	.4002	9.968
.2631	10.426	.3755	10.519	.4685	10.589	.4009	9.961
.2701	10.427	.3762	10.519	.4695	10.608	.4016	9.951
.2709	10.458	.3781	10.507	.4703	10.642		
.2718	10.470	.3792	10.513	.4715	10.636	2439597.2903	9.904
.2837	10.535	.3842	10.503	.4722	10.616	.2927	9.909
.2870	10.540	.3852	10.524	.4762	10.575	.2934	9.946
.2877	10.516	.3861	10.544	.4769	10.620	.2942	9.909
.2927	10.467	.3870	10.500	.4780	10.622	.2949	9.961
.2932	10.516	.3877	10.545	.4788	10.590	.2960	9.952
.2939	10.458	.3886	10.539	.4798	10.589	.2969	9.961
.2947	10.478	.3894	10.555	.4805	10.555	.2981	9.896
.2954	10.537	.3903	10.541	.4812	10.545	.2987	9.890
.2961	10.534	.3912	10.551	.4824	10.506	.3030	9.855
.2968	10.488	.3995	10.546	.4835	10.471	.3039	9.855
.2975	10.548	.4003	10.554	.4844	10.467	.3047	9.870
.2982	10.539	.4012	10.580	.4851	10.443	.3056	9.858
		.4020	10.577	.4882	10.447	.3067	9.896
2439528.5210	10.433	.4029	10.591	.4889	10.442	.3075	9.899
.5219	10.358	.4037	10.551	.4896	10.426	.3091	9.905
.5238	10.442	.4046	10.541	.4904	10.382	.3107	9.918
.5246	10.338	.4054	10.519	.4911	10.389	.3115	9.912
.5253	10.444	.4061	10.519	.4918	10.355	.4350	10.285
.5261	10.427	.4071	10.522	.4926	10.328	.4377	10.294
.5297	10.326	.4079	10.553	.4933	10.309	.4387	10.281
.5306	10.309	.4151	10.556	.4941	10.322	.4407	10.267
.5314	10.312	.4160	10.573	.4966	10.280	.4417	10.263
.5388	10.119	.4167	10.555	.4973	10.254	.4427	10.285
.5395	10.190	.4176	10.607	.4980	10.225	.4436	10.240
.5403	10.142	.4187	10.555	.4990	10.222	.4503	10.301
.5409	10.135	.4194	10.595	.4998	10.230	.4518	10.330

Table 4 – continued

J. D. _{hel}	U	J. D. _{hel}	U	J. D. _{hel}	U	J. D. _{hel}	U
.4551	10.347	.3818	10.535	.3908	10.523	.4049	10.565
.4583	10.330	.3826	10.537	.3917	10.554	.4064	10.543
.4593	10.363	.3832	10.523	.3942	10.481	.4073	10.531
.4604	10.318	.3841	10.534	.3951	10.539	.4103	10.508
2439611.3527	10.529	.3851	10.497	.3960	10.498	.4125	10.526
.3536	10.514	.3859	10.498	.3968	10.556	.4178	10.525
.3544	10.570	.3866	10.548	.3978	10.540	.4189	10.522
.3552	10.490	.3874	10.477	.3991	10.489	.4202	10.554
.3559	10.542	.3883	10.506	.4023	10.513	.4212	10.544
.3566	10.559	.3891	10.558	.4031	10.489	.4221	10.555
.3573	10.495	.3899	10.498	.4041	10.525		

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UBV FOTOELEKTRICKÉ POZOROVANIA KRÁTKOPERIODICKEJ CEFEIDY TT LYN

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Súhrn

Krátkoperiodická cefeida TT Lyn sa pozorovala systematicky na Astronomickom observatóriu na Skalnatom plese v období od januára 1961 do mája 1967. Pozorovania sa získali fotoelektrickým fotometrom, ktorý je inštalovaný v Newtonovom ohnisku zrkadlového ďalekohľadu. Priemer ďalekohľadu je 60 cm a jeho svetelnosť $f/5.5$. Ako detektor sa používal násobič elektrónov typu RCA 1 P 21. Aby sa znížili rušivé prúdy, oddelila sa anóda od päťice násobiča elektrónov. Vysokonapäťový zdroj NBZ 411 pre napájanie násobiča elektrónov má krátkodobú stabilitu 0.05 %. Výstupný signál z násobiča elektrónov sa registruje elektronickým líniovým kompenzačným zapisovačom EZ 4, ktorý zaručuje meranie signálu s presnosťou 0.2 %. Optická sústava využíva zobrazenie pomocou výstupnej pupily, takže možno merať objekty rozličnej štruktúry a výkon fotoelektrického fotometra nie je závislý od polohy pozorovaného objektu v ohniskovej clone. Pozorovania fotometrických štandardov ukázali, že inštrumentálny fotometrický systém sa len málo líši od medzinárodného UBV-fotometrického systému. Pozorovať sa začalo v odbore V, aby sa objavil Blažkov efekt alebo nepravidelné zmeny v jasnosti. Neskoršie sa pozorovací materiál doplnil pozorovaniami v odbore B a U. Stredná chyba jedného pozorovania v odbore V a B je v medziach 0^m006 až 0^m020 v závislosti od atmosferických podmienok. Presnosť pozorovaní v ultrafialovom odbore je približne dvakrát nižšia. UBV-fotoelektrické pozorovania sú v tabuľke 4.

UBV- ФОТОЭЛЕКТРИЧЕСКИЕ НАБЛЮДЕНИЯ КОРОТКОПЕРИОДИЧЕСКОЙ ЦЕФЕИДЫ TT LYN

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Резюме

Короткопериодическая цефеида TT Lyn наблюдалась в Астрономической обсерватории Скалнате плесо с января 1961 г. Наблюдения велись при помощи фотоэлектрического фотометра, установленного в фокусе Ньютона рефлектора. Диаметр зеркала телескопа составляет 60 см, а его светосила — $f/5.5$. В качестве детектора используется электронный умножитель типа RCA 1 P 21. С целью снижения паразитного тока анод изолируется от цоколя электронного умножителя. Высоковольтный источник питания типа NBZ 4 11 для электронного умножителя обладает кратковременной устойчивостью 0,05 %. Сигнал на выходе электрического умножителя регистрируется при помощи электронного линейного записывающего устройства EZ 4, гарантирующего измерение сигнала с точностью 0,2 %. Оптическая система использует изображение при помощи выходного зрачка, что позволяет измерение объектов различной структуры, а производительность фотоэлектрического фотометра не зависит от положения наблюдаемого объекта в фокусной диафрагме. Наблюдения фотометрических стандартов показали, что инструментальная фотометрическая система лишь немного отличается от стандартной международной UBV-фотометрической системы. Наблюдения были начаты в желтых лучах с целью обнаружения эффекта Блажко или нерегулярных изменений в блеске. Позднее материал наблюдений был дополнен и наблюдениями в синих и ультрафиолетовых лучах. Средняя ошибка одного наблюдения в желтых и синих лучах лежит в пределах 0^m006-0^m020 и зависит от атмосферных условий. Точность наблюдений в ультрафиолетовых лучах примерно в два раза меньше. Результаты UBV-фотоэлектрических наблюдений приведены в таблице 4.