

# Manual de operación del programa Zenit 1.5

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1. Ubique en el área de escritorio el icono de acceso directo para el programa Zenit 1.5



2. Al acceder al programa, se muestra la interfaz grafica con la lista precargada de análogos solares.

Instrumento: Boller/Análogos Solares

Objeto a buscar: [ ]

Objeto	AR J2000	DEC J2000	Mag	Temp
2MASS J0... 0:5:8.2	-30:29:42.1	11.98	5750	
2MASS J0... 0:46:19.4	85:15:23.6	15.65	5860	
2MASS J0... 1:58:15.3	37:33:19.7	13.26	5810	
2MASS J0... 2:41:28.1	42:38:37.1	13.66	5710	
2MASS J0... 2:42:19.2	42:30:4.5	13.72	5760	
2MASS J0... 7:45:38.5	-37:46:41.8	11.51	5734	
2MASS J0... 8:7:13.6	-47:25:15.6	12.73	5838	
2MASS J0... 8:8:0.5	-47:21:4.5	12.81	5742	
2MASS J0... 8:9:54.3	-47:21:41.9	11.84	5756	
2MASS J0... 8:37:22.2	20:10:37.4	11.40	5677	
2MASS J0... 8:40:27.4	19:16:40.9	11.17	5809	
2MASS J0... 8:40:48.3	19:55:18.9	11.03	5842	
2MASS J0... 8:40:49.1	-53:37:45.4	11.00	5700	
2MASS J0... 8:41:55.9	19:41:23.0	11.05	5841	
2MASS J0... 8:50:53.3	11:43:40.0	14.41	5746	
2MASS J0... 8:51:0.8	11:48:52.8	14.61	5780	
2MASS J0... 8:51:21.8	11:44:5.1	14.19	5800	
2MASS J0... 8:51:36.1	11:47:47.0	14.48	5866	
2MASS J1... 17:24:31.8	-49:59:8.6	0.00	5851	
2MASS J1... 17:46:26.1	5:49:42.3	12.92	5867	
2MASS J1... 17:53:21.3	-34:54:35.0	12.36	5696	
2MASS J1... 17:53:54.2	-34:46:7.8	12.53	5700	
2MASS J1... 17:54:19.2	-34:58:22.4	12.37	5696	
2MASS J1... 19:2:17.8	38:24:3.2	13.90	5777	

Objeto	AR Pres	Dec Pres	AH	DZ	Air Mass
2MASS J0... 0:05:51	-30:23:12	19:58:06	84.070398...	9.6802597...	
2MASS J0... 0:48:11	85:21:44	19:15:46	57.545769...	1.8635031...	
2MASS J0... 1:59:07	37:38:57	18:04:49	70.768120...	3.0359211...	
2MASS J0... 2:42:24	42:43:32	17:21:32	75.824077...	4.0833499...	
2MASS J0... 2:43:15	42:34:58	17:20:41	76.030550...	4.1424766...	
2MASS J0... 7:46:09	-37:49:37	12:17:47	172.29767...	-1.009103...	
2MASS J0... 8:07:40	-47:28:43	11:56:16	163.55831...	-1.042633...	
2MASS J0... 8:08:28	-47:05:43	11:55:29	163.83373...	-1.040643...	
2MASS J0... 8:10:21	-47:25:13	11:53:35	163.58616...	-1.042483...	
2MASS J0... 8:38:11	20:06:28	11:25:46	128.18339...	-1.617639...	
2MASS J0... 8:41:16	19:12:27	11:22:41	128.94681...	-1.590829...	
2MASS J0... 8:41:37	19:51:05	11:22:20	128.29862...	-1.613516...	
2MASS J0... 8:41:14	-53:41:58	11:22:42	156.37625...	-1.091465...	
2MASS J0... 8:42:44	19:37:07	11:21:12	128.47932...	-1.607106...	
2MASS J0... 8:51:40	11:39:13	11:12:17	135.78452...	-1.395232...	
2MASS J0... 8:51:47	11:44:26	11:12:10	135.69273...	-1.397412...	
2MASS J0... 8:52:08	11:39:38	11:11:49	135.74828...	-1.396052...	
2MASS J0... 8:52:22	11:43:19	11:11:34	135.67380...	-1.397863...	
2MASS J1... 17:25:38	-50:00:05	2:38:18	88.323377...	34.182420...	
2MASS J1... 17:47:08	5:49:21	2:16:49	40.784116...	1.3205985...	
2MASS J1... 17:54:18	-34:54:43	2:09:38	72.871214...	3.3573788...	
2MASS J1... 17:54:51	-34:46:15	2:09:06	72.493492...	3.3243432...	
2MASS J1... 17:55:16	-34:58:29	2:08:41	72.631380...	3.3499121...	
2MASS J1... 19:02:47	38:25:50	1:01:10	14.543020...	1.0331013...	

Fecha UTC: 29/10/2019    Hora UTC: 00:57:12    Hora Sidereal: 20:03:58    Recalcular

3. La pantalla muestra 2 ventanas, la ventana de la izquierda muestra la lista normal que contiene el nombre del objeto, las coordenadas en época 2000, la magnitud y su correspondiente temperatura.

Objeto	AR J2000	DEC J2000	Mag	Temp
HD189210	19:56:59.7	43:45:8.3	9.98	5842
HD189625	20:1:32.8	-16:52:8.4	7.33	5852
HD190125	20:8:3.2	-67:44:49.4	8.90	5682
HD190524	20:5:48.7	-15:45:22.4	8.44	5825
HD190613	20:6:23.9	-14:54:43.7	8.12	5776
HD190771	20:5:9.8	38:28:42.4	6.17	5797
HD192417	20:19:38.0	-69:0:54.6	8.19	5745
HD194490	20:27:59.8	-51:39:52.0	8.97	5757
HD195034	20:28:11.8	22:7:44.4	7.09	5799
HD195962	20:38:25.5	-66:32:19.6	8.31	5712
HD196390	20:39:2.5	-49:19:53.1	7.32	5876
HD196850	20:38:40.2	38:38:6.3	6.78	5790
HD197027	20:41:54.6	-27:12:57.4	9.15	5726
HD197076	20:40:45.1	19:56:7.9	6.44	5816
HD200565	21:4:5.7	3:58:50.4	8.42	5718
HD200633	21:4:44.1	-4:49:44.0	8.34	5839
HD201422	21:10:7.9	-24:49:23.2	8.53	5833
HD201989	21:14:1.8	-29:39:48.7	7.35	5749
HD202108	21:12:57.6	30:48:34.2	7.33	5698
HD202282	21:15:11.7	-15:44:28.3	8.96	5804
HD202628	21:18:27.3	-43:20:4.7	6.75	5810
HD204313	21:28:12.2	-21:43:34.5	8.02	5756
HD205545	21:36:47.6	-30:43:28.9	8.67	5701
HD207043	21:47:55.3	-52:55:50.3	7.57	5731

- La ventana de la derecha, muestra el nombre del objeto, las coordenadas ya precesadas a la fecha actual, el Angulo Horario AH, la distancia cenital DZ, y masa de aire Air Mass.

Objeto	AR Pres	Dec Pres	AH	DZ	Air Mass
HD189067	19:57:56	24:08:30	0:06:01	7.0387466...	1.0075937...
HD189210	19:57:28	43:48:20	0:06:30	12.817442...	1.0255550...
HD189625	20:02:21	-16:48:48	0:01:37	47.867925...	1.4906674...
HD190125	20:09:24	-67:41:19	-0:05:25	98.746912...	-6.575740...
HD190524	20:06:37	-15:41:56	-0:02:38	46.756150...	1.4596336...
HD190613	20:07:12	-14:51:17	-0:03:13	45.914058...	1.4373283...
HD190771	20:05:41	38:32:06	-0:01:42	7.4907104...	1.0086074...
HD192417	20:21:00	-68:57:08	-0:17:01	100.05456...	-5.727705...
HD194490	20:29:01	-51:35:54	-0:25:03	82.834828...	8.0175248...
HD195034	20:28:50	22:11:41	-0:24:51	10.450233...	1.0168670...
HD195962	20:39:40	-66:28:08	-0:35:42	97.761249...	-7.404696...
HD196390	20:40:02	-49:15:41	-0:36:03	80.715496...	6.1983349...
HD196850	20:39:13	38:42:17	-0:35:14	10.515338...	1.0170808...
HD197027	20:42:45	-27:08:42	-0:38:46	58.928987...	1.9376165...
HD197076	20:41:24	20:00:21	-0:37:25	13.889240...	1.0301192...
HD200565	21:04:48	4:03:32	-1:00:50	30.556737...	1.1612709...
HD200633	21:05:29	-4:45:00	-1:01:30	38.696268...	1.2812789...
HD201422	21:10:57	-24:44:33	-1:06:58	58.051302...	1.8897958...
HD201989	21:14:52	-29:34:54	-1:10:53	62.934063...	2.1977379...
HD202108	21:13:34	30:53:26	-1:09:36	14.904946...	1.0348177...
HD202282	21:15:58	-15:39:33	-1:12:00	49.812672...	1.5496976...
HD202628	21:19:21	-43:15:05	-1:15:23	76.286050...	4.2181339...
HD204313	21:29:00	-21:38:25	-1:25:01	56.502174...	1.8119112...
HD205545	21:37:37	-30:38:11	-1:33:38	65.570603...	2.4179751...

- En la parte inferior de ambas ventanas, se encuentran los datos siguientes datos:

**Fecha UTC:** Muestra la fecha universal

**Hora UTC:** Hora universal

**Hora sideral:** Es la hora sideral en el sitio del OAGH.

**Recalcular:** Calcula los nuevos valores de las coordenadas de Ar y Dec precesadas, el Angulo Horario AH, la distancia cenital DZ y la masa de aire Air Mass.

Fecha UTC  Hora UTC

Hora Sideral:

- El programa no actualiza de manera automática la hora sideral local por cuestiones de ahorro de memoria RAM, por lo que si se desea conocer la posición de los objetos que integran la lista al momento de ser observados, solo deberá presionar el botón **Recalcular** para obtener los nuevos datos.
- Para conocer las condiciones de observación de un objeto, vaya a la ventana izquierda y de un click con el botón izquierdo del ratón sobre el objeto de interés. Se seleccionara en una banda en color azul como se muestra a continuación.

Instrumento Boller/Análogos Solares

Objeto	AR J2000	DEC J2000	Mag	Temp
HD189210	19:56:59.7	43:45:8.3	9.98	5842
HD189625	20:1:32.8	-16:52:8.4	7.33	5852
HD190125	20:8:3.2	-67:44:49.4	8.90	5682
HD190524	20:5:48.7	-15:45:22.4	8.44	5825
HD190613	20:6:23.9	-14:54:43.7	8.12	5776
HD190771	20:5:9.8	38:28:42.4	6.17	5797
HD192417	20:19:38.0	-69:0:54.6	8.19	5745
HD194490	20:27:59.8	-51:39:52.0	8.97	5757
HD195034	20:28:11.8	22:7:44.4	7.09	5799
HD195962	20:38:25.5	-66:32:19.6	8.31	5712
HD196390	20:39:2.5	-49:19:53.1	7.32	5876
HD196850	20:38:40.2	38:38:6.3	6.78	5790
HD197027	20:41:54.6	-27:12:57.4	9.15	5726
HD197076	20:40:45.1	19:56:7.9	6.44	5816
HD200565	21:4:5.7	3:58:50.4	8.42	5718
HD200633	21:4:44.1	-4:49:44.0	8.34	5839
HD201422	21:10:7.9	-24:49:23.2	8.53	5833
HD201989	21:14:1.8	-29:39:48.7	7.35	5749
HD202108	21:12:57.6	30:48:34.2	7.33	5698
HD202282	21:15:11.7	-15:44:28.3	8.96	5804
HD202628	21:18:27.3	-43:20:4.7	6.75	5810
HD204313	21:28:12.2	-21:43:34.5	8.02	5756
HD205545	21:36:47.6	-30:43:28.9	8.67	5701
HD207043	21:47:55.3	-52:55:50.3	7.57	5731

Fecha UTC 29/10/2019 Hora UTC 00:57:12 Ho

- Una vez que se visualiza la banda azul de selección en la ventana izquierda, en la ventana derecha aparecerá la selección del objeto a conocer con la misma banda azul.

Instrumento Boller/Análogos Solares Objeto a buscar HD190771

Objeto	AR J2000	DEC J2000	Mag	Temp
HD189210	19:56:59.7	43:45:8.3	9.98	5842
HD189625	20:1:32.8	-16:52:8.4	7.33	5852
HD190125	20:8:3.2	-67:44:49.4	8.90	5682
HD190524	20:5:48.7	-15:45:22.4	8.44	5825
HD190613	20:6:23.9	-14:54:43.7	8.12	5776
HD190771	20:5:9.8	38:28:42.4	6.17	5797
HD192417	20:19:38.0	-69:0:54.6	8.19	5745
HD194490	20:27:59.8	-51:39:52.0	8.97	5757
HD195034	20:28:11.8	22:7:44.4	7.09	5799
HD195962	20:38:25.5	-66:32:19.6	8.31	5712
HD196390	20:39:2.5	-49:19:53.1	7.32	5876
HD196850	20:38:40.2	38:38:6.3	6.78	5790
HD197027	20:41:54.6	-27:12:57.4	9.15	5726
HD197076	20:40:45.1	19:56:7.9	6.44	5816
HD200565	21:4:5.7	3:58:50.4	8.42	5718
HD200633	21:4:44.1	-4:49:44.0	8.34	5839
HD201422	21:10:7.9	-24:49:23.2	8.53	5833
HD201989	21:14:1.8	-29:39:48.7	7.35	5749
HD202108	21:12:57.6	30:48:34.2	7.33	5698
HD202282	21:15:11.7	-15:44:28.3	8.96	5804
HD202628	21:18:27.3	-43:20:4.7	6.75	5810
HD204313	21:28:12.2	-21:43:34.5	8.02	5756
HD205545	21:36:47.6	-30:43:28.9	8.67	5701
HD207043	21:47:55.3	-52:55:50.3	7.57	5731

Objeto	AR Pres	Dec Pres	AH	DZ	Air Mass
HD189067	19:57:56	24:08:30	0:06:01	7.0387466...	1.0075937...
HD189210	19:57:28	43:48:20	0:06:30	12.817442...	1.0255550...
HD189625	20:02:21	-16:48:48	0:01:37	47.867925...	1.4906674...
HD190125	20:09:24	-67:41:19	-0:05:25	98.746912...	-6.575740...
HD190524	20:06:37	-15:41:56	-0:02:38	46.756150...	1.4596336...
HD190613	20:07:12	-14:51:17	-0:03:13	45.914058...	1.4373283...
HD190771	20:05:21	38:28:05	-0:01:42	7.2917102...	1.0085072...
HD192417	20:21:00	-68:57:08	-0:17:01	100.05456...	-5.727705...
HD194490	20:29:01	-51:35:54	-0:25:03	82.834828...	8.0175248...
HD195034	20:28:50	22:11:41	-0:24:51	10.450233...	1.0168670...
HD195962	20:39:40	-66:28:08	-0:35:42	97.761249...	-7.404696...
HD196390	20:40:02	-49:15:41	-0:36:03	80.715496...	6.1983349...
HD196850	20:39:13	38:42:17	-0:35:14	10.515338...	1.0170808...
HD197027	20:42:45	-27:08:42	-0:38:46	58.928987...	1.9376165...
HD197076	20:41:24	20:00:21	-0:37:25	13.889240...	1.0301192...
HD200565	21:04:48	4:03:32	-1:00:50	30.556737...	1.1612709...
HD200633	21:05:29	-4:45:00	-1:01:30	38.696268...	1.2812789...
HD201422	21:10:57	-24:44:33	-1:06:58	58.051302...	1.8897958...
HD201989	21:14:52	-29:34:54	-1:10:53	62.934063...	2.1977379...
HD202108	21:13:34	30:53:26	-1:09:36	14.904946...	1.0348177...
HD202282	21:15:58	-15:39:33	-1:12:00	49.812672...	1.5496976...
HD202628	21:19:21	-43:15:05	-1:15:23	76.286050...	4.2181339...
HD204313	21:29:00	-21:38:25	-1:25:01	56.502174...	1.8119112...
HD205545	21:37:37	-30:38:11	-1:33:38	65.570603...	2.4179751...

Fecha UTC 29/10/2019 Hora UTC 00:57:12 Hora Sidereal: 20:03:58 Recalcular

- Si la selección no es visible, desplace la lista de la ventana derecha hacia abajo o hacia arriba según sea el caso, para detectar la banda. Si aun así no aparece, vuelva a seleccionar el objeto en la ventana izquierda.
- La banda de selección azul, le permitirá identificar las características de la observación del objeto de interés. Recuerde presionar el botón **Recalcular**, para conocer las condiciones actualizadas del objeto.

Nota: La selección en ambas ventanas, se da a partir de la selección en la ventana izquierda, si se selecciona primero en la ventana derecha, aparecerá la banda azul, pero la selección en la izquierda no aparecerá.