meteoblue p☼int Seeing Prediction 1-6 days

0 Display

The p☼int Seeing Prediction 1-6 days (see Figure 1 - 3) shows the hourly development of temperature, humidity, precipitation, jet stream, clouds and seeing through the atmosphere for the forecast period (1st to 6th day after calculation of forecast).

All data are displayed in local time, corrected for summer time, except the update time.

Mon 23.03.2009 06:18 18:27 meteoblue.com

Time (UTC)	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
High Clouds (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	33	3	2	25	85	99	92	63
Mid Clouds (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	45	87
Low Clouds (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seeing Index 1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Seeing Index 2	5	5	5	5	5	5	5	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Seeing arcSeconds	1.49	1.53	1.49	1.46	1.46	1.47	1.51	1.56	1.65	1.72	1.79	1.84	1.86	1.74	1.59	1.43	1.37	1.36	1.39	1.41	1.44	1.48	1.51	1.58
Jet stream (m/s)	3	4	5	7	7	7	8	9	9	10	11	11	13	15	15	15	15	15	14	14	14	13	13	12
2m Rel. Hum. (%)	41	41	40	39	38	37	36	36	37	37	37	38	37	36	33	32	31	30	33	35	36	36	36	34
Bad Layers Top (km)	1.6	1.6	1.5	1.5	1.5	1.5	1.5	3.7	3.7	3.7	3.7	3.1	3.1	3.1	3.1					3.7	3.7	3.7	3.7	
Bad Layers Bot (km)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	3.1	3.1	2.6	2.6	2.6	2.6	2.6	2.6					3.1	3.1	3.1	3.1	
Bad Layers K/100m	0.59	0.60	0.58	0.55	0.62	0.69	0.73	0.51	0.53	0.52	0.52	0.56	0.56	0.54	0.52					0.52	0.59	0.61	0.56	

Figure 1. Seeing diagram with 24 hour forecast. Parameters use colour scale. Location in UTC time zone; location name and coordinates not displayed.

1 Parameters

1.1 Clouds

Cloud cover is displayed in percent (%). The cloud levels are for low (ground – 4 km), medium (4-8 km) and high (above 8 km). More explanations on the altitude of the levels is given under HELP \ Standards \ Clouds on www.meteoblue.com.

1.2 Seeing

The seeing prediction is shown in five levels (from 1= bad; up to 5= very good). Clouds are not considered, as they can be derived directly from the diagram (Figure 1). A good Seeing index is therefore not automatically equivalent with clear skies. Seeing values can be illustrated with color scales, to improve interpretation.

The seeing index considers the expected air layer turbulences (see Figure 2) using different models. The index 1 and 2 use different turbulence weightings; Index 2 gives higher weight to turbulences. The Seeing prediction is based on methods described in the literature and refined by Brice-Olivier Demory (see Demory, Brice-Olivier: Modèle de prévision de tendance de Seeing, http://www.meteosurf.com/spastro/seeing/index.html).

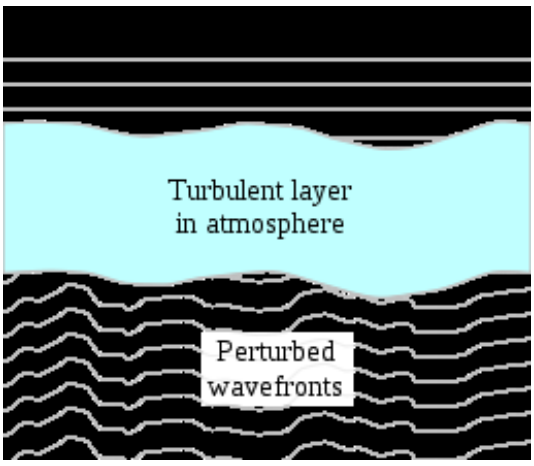

Figure 2. Description for origin of optical turbulences (Seeing) in the earth atmosphere. (Source: http://en.wikipedia.org/wiki/Seeing).

1.3 Jet stream

The jet stream for the upper atmosphere is shown in meters per second (m/s). Medium jet stream speeds tend to improve seeing; low speeds allow accumulation of high level clouds, and high speeds create turbulences.

1.4 Relative Humidity

The relative humidity at 2 m above ground is predicted for the altitude indicated in the diagram title (Figure 1). The relative humidity is the same as in the corresponding meteogram for the same location.

1.5 Bad Layers

Bad Layers have a temperature Gradient > 0.5°K/100m. The actual gradient is shown in °K/100m altitude. The top and bottom height of the Bad layers is indicated by Bad Layers bot/top.

The bad layers display allows astronomers to estimate how strong the turbulences are and if they can expect to be (partially) above them when in mountainous terrain.

2 Place

2.1 Location

The diagram is valid for the location displayed in the title, with name and coordinates (see Figure 3). Hours are displayed in local time.

2.2 Area

The cloudiness of the area, the jet stream and the Bad Layers are calculated for the area surrounding the selected place, using the highest resolution forecast available. Cloudiness may therefore be slightly different from the meteogram, which shows the cloud cover for the grid cell of the location selected only.

Figure 3. Seeing prediction diagram title: Location name, coordinates and time of update.

3 Date and Time

3.1 Display

The diagrams show forecast in hourly steps during the forecast period. Hours are displayed in local time. The data are valid for the hour preceding the time indicated.

In countries with summertime correction, the Seeing Prediction time will be changed on the day of the summertime switch. A Seeing Prediction produced 1-6 days before the summer-time switch will thus display the days after the switch with 1 hour difference to the future “actual” time. After the switch, the p☼int Seeing Prediction will again display day 1-6 in the correct actual time.

3.2 Update

Diagrams are updated at least twice daily. The update time is displayed in the title of the diagrams (Figure 3). Update time is in UTC (Greenwich).

4 Use

The Seeing Prediction is available for 1-6 days with hourly intervals.

Changes between a forecast and actual observation occur mostly in the phasing (timely development) of the forecast.

Forecast Probability: Probability can be derived from the meteograms. Probabilities for cloudiness are not calculated separately. The precipitation probability is an indication of probability for the expected cloudiness.

Detail 1-6 day Seeing Predictions give a good overview of the expected weather patterns, and can be used for observation planning.

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