Meteorology, and Weather Forecast for Mount Pocono, PA from Joseph

Welcome to my space on the WWW. Being a meteorologist, this primarily contains weather information.

Below is a frequently updated forecast for Mount Pocono, PA (location information). Low nearby areas will generally be warmer - about 3-6 °F, and very high ones 2-4° cooler. Valleys may cool comparably or more during clear nights. Unfortunately I cannot always keep this current, though I try updating it at least daily or if it becomes significantly inaccurate. ISP problems can prevent this also.

Mount Pocono Weather Discussion and Forecast

I take daily weather statistics :

Mount Pocono Daily Weather Statistics

Below is a longer term forecast for Ann Arbor, MI. I may not be updating this so frequently - I can discuss details more effectively directly with my client there. Thus it shouldn't be viewed as a frequently updated source for daily forecasts as the Mount Pocono one can.

Ann Arbor Weather Discussion and Forecast

I have a series of articles specifically designed as an ordered sequence of study for weather forecasting, which I am now beginning to place here :

Series of Weather Forecasting Articles

I am also including other selected weather articles here from a former site :

Assortment of Weather Articles

I am also a weather consultant. If you like the weather information at my site, but desire personalized and more specific information, I am sure that working for you would be a pleasure :

Weather Consulting Information

Below is a little personal information regarding me :

Personal Information

WWW Weather Data

Weather data is very abundant at many sites, particularly for the U.S. Below are my suggested best links. Some may sometimes be unavailable - this is not meant as being comprehensive, though a good alternate source for some are shown. Please check times on maps. CONUS means "continental U.S.". For most data, you can link directly to the images which interest you.

I think the front page of Unisys Weather is best for a quick look at the current weather situation, and you can enter your zip code or city name for a local NWS forecast and nearby conditions. Though more detailed charts are listed below, this shows a large scale surface chart with cloudiness and precipitation, which can be animated. The PSC Weather Center has something similar; and if you like doing your own analyses, offers the ability of making your own charts. I prefer using data from Florida State University's archives and Digital Atmosphere for surface and upper air charts.

Regarding listed data, the Fort Dix NEXRAD covers Mount Pocono best, though the Binghamton also provides coverage (which mountains to N & W more likely obstruct). Because neither are close and because mountains can augment precipitation, it is generally a bit heavier here than those depict. For call signs (3-letter station ID's), Texas A&M's Weather Interface (listed below) is helpful, they are printed on the UCAR surface charts for stations plotted, and some are shown on Intellicast's regional radar images. For model forecasts, the 6 & 12-hourly model surface charts are typically informative, though many others are useful - even the initializations (0 HR forecasts). Comparison of those with actual upper air charts can often be helpful. Unisys WXP has nice explanations of model details for their charts, much of which is applicable for those at other sites with some small adjustments.

Climate information is available at several sites, 2 of which I find particularly useful are the Pennsylvania State Climatologist site & Herb's Mid-Atlantic Weather Station. The former includes many descriptions of PA climate, abundant data for specific locations, and links for forecasts; and the latter a great variety of weather information emphasizing climate in the mid-Atlantic region (based in Columbia, MD).

Official NWS Interactive Weather Information Network (IWIN) forecasts & related information

- IWIN with active warnings
- All warnings and advisories for PA, VA, WV, MD, DE, NJ, NY, CT, RI, MA, VT, NH, & ME
- Zone forecasts for PA, VA, WV, MD, DE, NJ, NY, CT, RI, MA, VT, NH, & ME
- NOWcasts for PA, VA, WV, MD, DE, NJ, NY, CT, RI, MA, VT, NH, & ME

- Other state data for PA, VA, WV, MD, DE, NJ, NY, CT, RI, MA, VT, NH, & ME

METAR & surface observations
- PA surface data from PA DEP
- METAR interactive map from FRD
- Offshore data and plots from PSU WX

Many forms of text data
- SUNY-Albany Quick-look Form
- Texas A&M Weather Interface

Surface charts
- Centered at Baltimore, MD & Albany, NY from UCAR
- For NE US & CONUS with objective analysis from Unisys
- Surface charts from NWS Fax (requires TIF viewer)

Upper air charts
- 850 mb, 700 mb, 500 mb, 300 mb, & 200 mb with objective analysis from NWS Fax (requires TIF viewer)
- 850 mb, 700 mb, 500 mb, 300 mb, & 200 mb with recent RUC2 analysis from UCAR

Unisys Radar Images & Animations
- NE U.S. & CONUS

Intellicast Radar Images (can animate from these links also)
- NEXRAD reflectivity .5° tilt centered near Fort Dix, NJ, Binghamton, NY, State College, PA, Dover, DE, Pittsburgh, PA, Brookhaven, NY, Sterling, VA, Buffalo, NY, Montague, NY, Albany, NY, Taunton, MA, Burlington, VT, Gray, ME
- NEXRAD radial velocity .5° tilt centered near Fort Dix, NJ, Binghamton, NY, State College, PA, Dover, DE, Pittsburgh, PA, Brookhaven, NY, Sterling, VA, Buffalo, NY, Montague, NY, Albany, NY, Taunton, MA, Burlington, VT, Gray, ME
- Composites centered near Waynesboro, VA, Binghamton, NY, Berlin, NH, & CONUS

Satellite Images
- Detailed Visible, Infrared, & Water Vapor zoomable and animatable from GHCC
- NE US Visible, Infrared, & Ehanced Infrared images with animation options from Unisys
- CONUS Visible, Infrared, Ehanced Infrared, & Water Vapor images with animation options from Unisys
- Detailed images with explanations from UCAR's Satellite Page

Sounding Information

- Skew-T diagrams avalible from UCAR's Upper Air Page
- Satellite sounding information, skew-T diagrams, and NE US lifted indices from NOAA-NESDIS

Ocean Temperatures

- Assortment of ocean products from NLMOC
- Assortment of ocean products from JHU

Model Forecast Text

- FOUE61, FOUE60, FOUE62 (NGM) from OSU
- FOUS61, FOUS60, FOUS62 (NGM) from OSU

Model Forecast Images

- NGM, ETA, Meso-ETA, RUC, AVN, MRF, & ECWMF from Unisys
- NOGAPS, AVN, & MRF from FNMOC
- GEM and other model forecasts from EC

Site Links

Base site or affiliation for data linked to above :
OSU Buckeye Weather
UCAR Real-Time Weather Data
Texas A&M Weather Center
PSU WX Penn State University Weather Pages
NLMOC Naval Atlantic Meteorology and Oceanography Center
GHCC NASA-MSFC Interactive Global Geostationary Satellite Imagery
FRD NOAA'a Forecast Research Division
JHU Johns Hopkins University, Ocean Remote Sensing
NWS Fax NWS Fax Charts
PA DEP Pennsylvania Department of Environmental Protection
EC Environment Canada
Unisys Unisys Weather
Intellicast
SUNY-Albany The Albany Weather Page
FNMOC Fleet Numerical Meteorology and Oceanography Center
NOAA-NESDIS Office of Research Applications
NWS IWIN Interactive weather Information Network

Viewing Tips

If an image or file does not seem current, try reloading image using right mouse button. You can bookmark your favorites similarly.

On each of the images above, Coordinated Universal Time (UTC) or Greenwhich Mean Time (GMT) is shown. Converting to local standard time is not difficult.

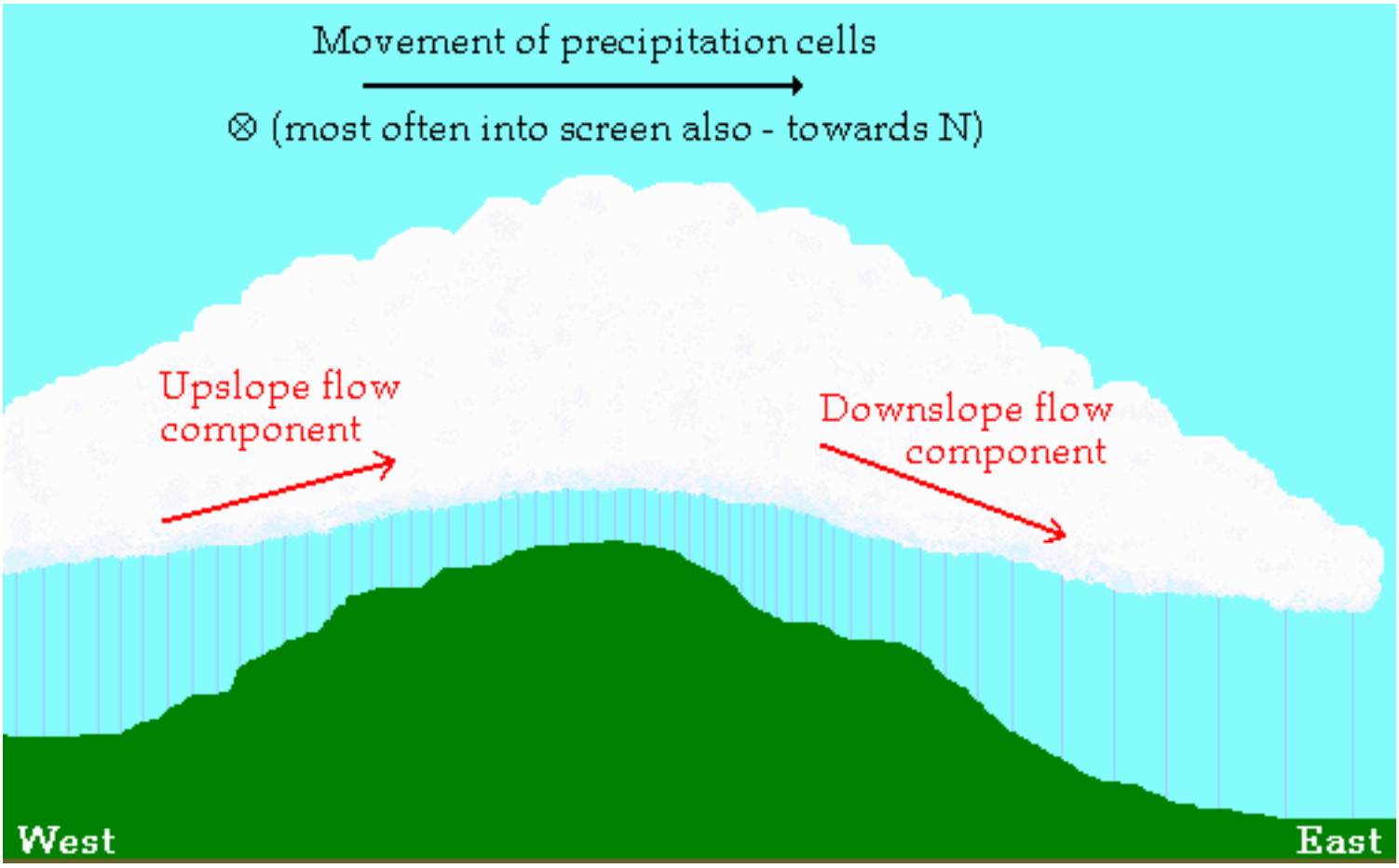
Mount Pocono, PA Location Information

This is not meant as a tour guide or any such thing, which you can also find on the WWW. It is a simple description of my location for meteorological purposes. I am in a local trough at approximately 1605 feet elevation near the top of a steep largely-forested slope facing downward ESE. Local topography is generally 50-290 feet higher to every direction except NE-ESE - quite steeply directly WNW, where it is 341 feet higher less than ½ mile away. This can be seen on a map at TopoZone. The 1946 foot peak is left & slightly up of center, and my location is ESE of it as marked on the map. The locale is called Deer Run, because deer often come down the slope and along the trof.

I pieced together a map of these sections surrounding Mount Pocono covering a much larger area, but uploading it would probably be violating copyright ☹ My coordinates are 41.132 °N, 75.347 °W (the TopoZone coordinates differ from other sources that also use USGS data - because of very slightly different coordinate systems), using which you can see the large scale topography of the surrounding region on a Color Landform Altas map from a site from Ray Sterner at Johns Hopkins University. The NJ map actually shows much more detail, though nothing much W of here. Climate reports and weather observations are available from MPO (Pocono Mountains Municipal Airport) at approximately 1896 feet, AVP (Avoca Airport) 28 miles WNW at 961 feet, and ABE (Allentown Airport) 33 miles SSE at 387 feet. The ASOS instrumentation at MPO is W of the runway & seems to be slightly SW of the 1900 foot contour as marked on this map. My location's position relative to the airport can be seen well on this map, using positions from the previous 2. Using the coordinates, the airport is 2.38 miles away at 290° and 291 feet higher.

A fine description of our climate is provided at The Pennsylvania State Climatologist site.

Precipitation is evidently locally augmented because of flow over mountains. Most precipitation tends to be deposited slightly on the downslope side of a mountain ridge. The upslope flow augments cloudiness & drop / crystal formation most at the ridge, but precipitation requires awhile to form in the clouds & fall. Storms which pass our region - especially cold fronts from the W - seemingly deposit most rain here after developing to their maximum extent at the ridge to our W. Though one of the earlier books _Climate and Weather_ from 1911 calls this a "rain shadow", I understand that most modern references call the rain shadow the area of minimum precipitation in a valley well downwind of a ridge. Thus I removed the term to avoid confusion.



Please be aware though that because of proximity to the Atlantic Ocean, locations E of the Appalachians receive similar annual precipitation amounts (i.e., because of more moisture & storm systems over sea). Data for PA (main site) does illustrate this, though note that amounts are similar with those of E PA in much of NJ, though it is generally lower.

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Mount Pocono, PA Weather Discussion & Forecast - explanation

3:25 PM EST Sunday 2 March 2003 (2025 UTC 2 March 2003)

Discussion : With new update.

Forecast : Becoming cloudy late afternoon, then a few flurries snow flurries / showers primarily at elevated locations late PM, then clearing - brisk & gusty NNW-NW winds, temps decreasing from low-mid 40's to early day mins of mid 0. Sunny daytime MON - diminishing NW-W winds, max temps around 20. A period of cloudiness late MON & early AM TUE - S breezes, min temps of mid-high 0's. Clearing early day TUE, then mainly sunny - SW winds, max temps of mid 30's. Clear much of TUE night - gusty SW breezes, early night min temps of lower 20's, increasing to around 30 late. Cloudy WED morning & early afternoon with rain changing to snow - gusty winds shifting to NNW - max temps of mid 30's. Clearing mid afternoon, then a clear night with gusty NW diminishing late - min temps of low 10's. Periods of high & mid level clouds daytime THU - S breezes, max temps of mid 30's. Clear THU night - gusty breezes veering to WSW, min temps of low-mid 20's. Periods of cloudiness with a few rain / snow showers daytime FRI - winds veering to WNW, max temps of mid 30's.

Min/max temperatures (°F) and precipitation & snow amounts (inches) :

MON 5 / 21 T T | TUE 7 / 37 0 | WED 17 / 36 .11 T | THU 13 / 37 0 | FRI 21 / 35 .08 .3

Next *planned* update : Early night

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Mount Pocono, PA Daily Weather Statistics

Below are links for monthly data. Daily stats are for the 24 hour period beginning & ending midnight Mean Solar Time. Min & Max are minimum and maximum temperatures (°F), Pcp is precipitation amount (inches), and Snow is accumulation of frozen precipitation except hail from thunderstorms (inches). Blank precipitation amounts mean 0. Please see explanations below.

1999 : March April May June July August September October November December
2000 : January February March April May June July August September October November December
2001 : January February March April May June July August September October November December
2002 : January February March April May June July August September October November December
2003 : January February

Data using an octal scale I devised.

1999 : March April May June July August September October November December
2000 : January February March April May June July August September October November December
2001 : January February March April May June July August September October November December
2002 : January February March April May June July August September October November December
2003 : January February

Below are tables of monthly temperature averages and precipitation / snow totals. Trace amounts are counted as 0 for this.

Standard : 1999 2000 2001 2002 2003 Octal : 1999 2000 2001 2002 2003

Bill Woodworth kindly took the observations for 8-16 September 2000 and my uncle George Buynak for 11 November 2000's minimum so that a continuous record was maintained while I was gone. I recently adjusted some precipitation totals (primarily snow) which may be more accurate than my previous estimates - very difficult for some situations, particularly when windy.

Temperature

Temperature readings are obtained with a Taylor mercury max / min thermometer on the side of a wooden deck elevated about 7 feet above ground (though with small wood piles & a slope of several feet closeby) and shielded from direct and most diffuse solar radiation, and occasionally compared with readings from electronic devices at various locations. If unrepresentative for this elevation of the Mount Pocono area, the readings are probably a ° or 2 too low during a sunny summer day (abundant vegetation & shade in the nearby area) and likewise too high during night (radiation from house, trees, and the nearby slope perhaps countering cooling). There is such a phenomenon as the slope-side warm belt, which Professor Donald Portman of University of Michigan recently mentioned to me - the slope being warmer during relatively calm & clear nights than an adjacent valley and plateau, where cool air tends to settle. Dr. Portman feels the nocturnal low-level jet stream may contribute, but he

seems to want to blame it for eveything

I noticed many more odd than even numbers reported (143-95) when I counted 20 July 1999 - probably because of the larger space between even markings on the scale. Aware of that afterward, the possible bias should be minimized. Data for the summer of 2000 probably has a low bias for maximum temperature - it was cool, but I also placed the thermometer in a particularly shaded area.

Precipitation

These readings are obtained 2 ways - using a calibrated plastic rain gauge & sometimes comparing with or collecting rainfall on a surface approximately horizontal using a coffee can of nearly 4 inches diameter.

The gauge is from Productive Alternatives, purchased from Robert E. White Instruments (they sell a similar version of the Taylor max/min thermometer also). Drops sticking on the sides of the funnel is a bit of a problem, and I measured the inner tube as 1.257 inches at its bottom & 1.263 inches at its top, such that the offset for selected amounts to 1 inch is : 1 inch, +.0037 ; .75 inches, +.0019 ; .5 inches, +.0006 (i.e., almost 0 for amounts near .5 inch or less). The first .01 inch appears rather accurate, which is a nice quality for a calibrated gauge (the scale on my thermometer requires a slight adjustment also). I am satisfied with its performance.

Using the can, contents are spilled in another rain gauge with a much smaller diameter. From these, a ratio is determined, and an adjustment for consideration of the amounts I cannot remove from the sides of the large can (which is typically much less than .01 inches). This method is probably more accurate than generally thought if the observer is attentive. Several problems with an automated gauge are avoided, and the approximate 25:1 or 16:1 ratio (depending which gauge I pour into) makes good precision possible. I particularly try noticing when .01 inch amounts occur (when possible) and estimate accumulation of trace amounts. These amounts cause problems for any gauge because of initial drops sticking to/wetting the sides of a container and evaporation. (Thus, I think significantly more .01 & .02 inch amounts and fewer traces occur than are commonly reported.) Actually, the main problem here is when very strong winds can blow even rain at a great enough angle that it is partially obstructed. I try noticing such situations and make an adjustment if I see that rain is not being collected as it should (which is actually rare). Comparions of the 2 methods side-by-side almost always agree within 0-2 %.

For snowfall, I try collecting in the plastic cylinder and/or can, which is often effective, though sometimes not during strong winds. For those situations, the most seemingly representative snow:water ratio is determined (collecting snow disturbing it as little as possible, then melting it in a closed container) and then used with the best estimated total snow amount fallen.

Snow

Snow measurement causes a great amount of discussion and argument. The **most relevant quantity may be the liquid water equivalent of accumulated snow**, because it determines the **weight** of snow which must be dealt with. For reporting a daily snow amount though, I primarily consider the **most representative maximum accumulation during periods of snow activity**. This does not include consideration of surfaces such as roads or rocks on which accumulation can be slower than other surfaces such as grass, metal, or wood. I am not trying to determine the average amount of snow which fell over the local area, but the most representative (i.e., quasi-average) maximum accumulation on surfaces where it accumulates well. Such are usually grass or wooden surfaces, though sometimes accumulation on top of a parked car is best, and quite easy measuring. That slighlty more snow *lands* on the open locations of largely wooded areas (as here) should be considered. When winds blow snow around, accumulation will generally be less because of compaction and because some enters ground waters (this can be quite significant here). Yet once it leaves a roof, it doesn't go back either. As snow occurs during a large storm (especially if temperatures are near or greater than freezing), it compacts and can melt. ¼ inch per hour of snow may be required for maintaining snow depth during such a situation. For these types of situations, I try using

my best judgement. I don't brush areas at specific intervals such as 1, 3 or 6 hours, measure new accumulations for each period, and add them. This can create a number much larger than what a person will be seeing around the locale. Why not brush away every 10 minutes then ? Where do you draw the proverbial line ? Calling 22 inches on the ground after a storm a 30 inch snowfall is not right, though perhaps some consideration should be made of the fact that a greater snow rate is required for increasing depth the same amount as more snow accumulates. I begin determining a new daily snow amount with new accumulations at midnight though, which essentially is brushing away every 24 hours.

Example of periods of snow activity : Suppose 3 separate snow squalls during a day deposit ½, 1, and ¾ inches, after which sunshine primarily melts each. These would clearly be 3 periods of activity, thus a daily accumulation of 2¼ inches; though I suppose a good arguement can be made that 1 or perhaps 1¼ inch was the maximum accumulation at any time during the day (I am considering using this method instead - comments ?).

Mean Solar Time uses the local meridian as reference - mean time the sun passes it being noon. Because the latitude of my location is 75.347 °W, it differs very little from Eastern Standard Time (EST), which uses 75 °W as reference. 15° of longitude corresponds with 1 hour of time, so midnight Mean Solar Time = 12:01:23 AM EST. Data prior to 10 August 2000 is for midnight-midnight EST. Note that using this, observations remain consistent across time zones.

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Ann Arbor, MI Weather Discussion & Forecast

10:04 PM EDT Saturday 1 March 2003

Discussion

Cloudiness & scattered snow showers would linger over the region until brisk & gusty NW flow develops behind a cyclone early afternoon. A chilly SUN night is likely, winds weakening then becoming southerly PM MON ahead of a weak Low approaching from the W. This would cause a period of light snow, then perhaps some clearing AM TUE. A developing Low would cause more cloudiness and a period of snow during PM, then skies clear early WED. I expect warmer SSW winds THU until a cold front causes a few showers late PM. A generally dry period would follow this - warm SW winds SAT, then a rather dry cold frontal passage - though the forecast becomes quite uncertain for then.

Min/max temperatures (°F) & precipitation & snow amounts (inches)

Day Date	Weather	MN/MX	P	S	Wind
SUN 3/02 :	Sct. morning & midday snow showers, then clearing	25/30	.03	.1	WSW-NNW 3-15G29
MON 3/03 :	Increasing PM clouds with light snow late	4/23	.04	.4	WNW-S 7-0-9
TUE 3/04 :	Mainly cloudy with PM snow	15/26	.11	1.4	S-NNW 5-11
WED 3/05 :	Mainly clear/sunny	8/27	0	0	NW-SSE 10-0-6
THU 3/06 :	Late PM clouds & rain/snow showers	18/41	.05	T	SSW 5-11G21
FRI 3/07 :	Mainly clear/sunny	23/35	0	0	NW-SE 9-0-5
SAT 3/08 :	Periods of cloudiness	25/50	0	0	SE-SW 3-11G20
SUN 3/09 :	Mainly cloudy AM, then clearing	31/34	T	0	NW-WNW 12G23-5
MON 3/10 :	Mainly clear/sunny	15/28	T	T	NW-NE 4-11G19
TUE 3/11 :	Clear/sunny	16/39	0	0	NE-SE 10

Next *planned* update : PM Sunday

Home Page

Series of Weather Forecasting Articles

Below is the first of a series of articles developed as an ordered study for learning weather forecasting. Doing so using the WWW is eventually emphasized, though many preliminaries must be discussed. Please read the first article as an introduction of their purpose. The end of the year is past, so that is one perhaps ambitious goal I did not accomplish; but I'll keep doing this when I can. For now, I am placing the articles I have here in their original form, and go from there. Many links are no longer valid - some because you must register - pay - or whatever to see them.

Regarding reading the articles, hot references in these are directed to a new window(s). Those for graphics at my site should open a new window for each. Those for another WWW site should open only one new window for all of such pages. This is done so that you can continue reading the article while browsing. Though displays using different PC's, systems, and browsers vary, these pages should appear best using 800×600 pixels and a base font size of 11 or perhaps 12.

Mission Possible - 8/27/1997
First of a series of weather forecasting articles. Excellent for interested readers with little previous meteorology study, but includes some ideas experienced readers possibly did not consider.

Prerequisites - Geometry - 9/4/1997
Discussion of some prerequisites previously mentioned in the list of study topics.

Prerequisites - Geometry & Math - 9/13/1997
Discussion of a few geometry applications and math, emphasizing topics and ideas most relevant for us.

Vectors & Gradient - 10/1/1997
A description of 2 & 3-dimensional vectors and an example of temperature gradient.

Prerequisites - Notation, Symbols, and Physical Quantities - 9/22/1997
Discussion of notation, symbols, and physical quntities, emphasizing those especially relevant for meteorology.

Temperature and Kinematic and Dynamic Quantities - 10/1/1997
Emphasizing quantities and concepts most relevant for meteorology.

A few more Math, Physics, and Related Topics - 10/10/1997
Elaboration regarding some previously discussed topics & chemistry introduction.

Electromagnetic Theory & Related Topics - 10 / 19 / 1997
Basic concepts regarding electromagnetics and relative motion.

Weather & Space - 10 / 29 / 1997
What weather is and its basic relation with outer space.

Electromagnetic Radiation & Our Sun - part 1 - 11 / 08 / 1997
Brief summary of electromagnetic radiation and its relation with solar composition.

Electromagnetic Radiation & Our Sun - part 2 - 11 / 18 / 1997
Sunspots and other solar features, and Earth's orbital effects regarding climate.

Energy Collection, and Atmospheric Composition and Layers - 11 / 29 / 1997
Discussion of these basics, with illustrations.

Global Atmospheric Circulations - 12 / 10 / 1997
A brief discussion of basic global atmospheric circulations.

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Assortment of Weather Articles

Below are the first of many more articles I plan to place here. Hot references in these are directed to a new window(s). Those for graphics at my site should open a new window for each. Those for another WWW site should open only one new window for all of such pages. This is done so that you can continue reading the article while browsing. Though displays using different PC's, systems, and browsers vary, these pages should appear best using 800×600 pixels and a base font size of 11 or perhaps 12.

Forest and City NY Temperatures - 3/13/200, revised 4/18/2002
Long-term trends for New York City and Indian Lake, and a brief disussion of the possible effects causing differences - especially vegetation.

Coriolis and Centrifgual Forces - 8/12/1998
A description of these apparent atmospheric forces with equations.

Relative Vorticity - 7/7/2001
A mathematical descrpition with a few physical examples.

19-20 December Snow Event - 12/22/2000
An analysis of the dynamical contributions to the snow band and enhancement over the Poconos from the coastal Low.

Central Park, NY Snow Stats - 10/25/2000
Can't argue with a complete record of snow stats since 1870 ! Here's a brief analysis and discussion of them.

Stratospheric Ozone Depletion & the Antarctic Ozone Hole - 2/16/1997
Stratospheric ozone depletion, emphasizing the Antarctic ozone hole and its measurement from outer space.

Ultraviolet Solar Radiation: Effects and UV Index - 2/23/1997
Ultraviolet solar radiation, emphasizing its harmful effects, its measurement, and the UV Index.

Clouds - 3/2/1997
Clouds, emphasizing types and formation.

Cloud Forecasting - 3/9/1997
Cloud forecasting is discussed, including an example from this week and one from almost a year ago.

A Method for Determining Mid-latitude Seasons - 3/16/1997

A discussion of mid-latitude seasons and their determination using equal seasonal temperature change.

Some Factors Influencing Global Seasons - 3/23/1997

Some factors influencing global seasons are discussed, particularly tropical monsoons, the ITCZ, and topographical effects.

Spring Snowmelt - 3/31/1997

Spring snowmelt is discussed, emphasizing snow water content estimation in mountainous regions of the northwest United States.

The California Cooperative Surveys - 4/13/1997

The California Cooperative Snow Surveys are discussed, including measurement and monitoring methods.

Basic Origins of Solar Energy - 4/27/1997

A discussion of basic origins of solar energy and how our atmosphere influences it.

Solar Energy, Clear Sky Effects - 5/4/1997

Ways clear skies affect solar energy in our atmosphere is discussed, particularly aerosol scattering and absorption.

Influence of Clouds on Solar Energy - 5/12/1997

Influence of clouds on solar energy, particularly shadowing and transmittance estimation

Terrestrial Solar Energy Applications - 5/20/1997

Terrestrial solar energy energy applications are discussed, emphasizing photovoltaics and solar cars.

U.S. Weather Forecasts on the WWW - 6/2/1997, revised 9/11/1999

A discussion of most accurate and efficient sources.

A few Southern Hemisphere Weather Analysis Topics - 6/10/1997

Air circulation around Highs and Lows in each hemisphere and orientation of weather charts is discussed.

A Weather Forecasting Menu - 6/17/1997, occasionally updated

A simple menu for weather forecasting for a specific location using WWW info is discussed.

HI (Heat Index) - 6/25/1997
A discussion of the heat index, its use, its calculation, and information for preparing for great heat stress episodes.

A Wet-Bulb Temperature Equation - 7/2/1997
Discussion of a wet-bulb temperature equation, emphasizing its use for calculation of dew point and relative humidity using psychrometer measurements.

Consequences of Wet-Bulb Process Regarding Snow - 7/9/1997
A discussion of a wet-bulb equation, emphasizing real precipitation and consequences regarding snow with temperatures > 0 °C.

Plotted Surface Charts - 10/23/1998
The first things you should know to analyze like a pro.

A Detailed Isobaric Surface Analysis - 11/29/1998
An example illustrating differing station densities - Note : contains 1.15 MB of JPG's.

Height & Pressure Coordinates - 1/10/1999
Relationships of basic atmospheric height and pressure coordinates

Upper Air Charts - 1/21/1999
Basic upper air chart construction and analysis

Upper Air Chart Analysis - 2/17/1999
A discussion of analysis techniques with examples.

Upper Air Analysis of a Storm - 2/23/1999
Example using the 2-4 January 1999 Great Lakes region storm.

Kinked Contours - 5/8/1999
A brief discussion of why these are often seen on weather charts.

Climate Normals, Part 1 - 8/4/1999
A description of basic climate normals and their calculation.

Climate Normals, Part 2 - 8/10/1999
Discussion of an alternative calculation method and interpretation.

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Weather Consulting

Along with the free daily forecasts I offer at this site, I also provide consulting services. Such includes detailed prognoses of weather elements & their timing for specific applications. For this, I can be contacted any time. Practically, periods occur when I won't be available, but these times can be arranged with the client's agreement. Please e-mail Joseph if this interests you.

Some qualifications

My weather interest began during grade school (along with many others), and I subsequently studied atmospheric science in college, obtaining a Bachelor of Science Degree from University of Michigan (3.59 GPA) and a Master of Science Degree from State University of New York at Albany (3.4 GPA - hundredths digit insignificant because of grading system). I can provide academic transcripts for those.

At University of Michigan, I finished among the top 10 of 300+ student, staff, and faculty forecasters in the National Collegiate Forecasting Contest 3 consecutive years (1982-5), being first in the Freshman-Sophomore Division (tenth overall) during 1982-3. I won 5 of 9 cities in an internet discussion group weather forecasting contest during 1995. These are among the most relevant things I can mention, because they illustrate my desire of making a good effort and ability of making accurate forecasts for 20 years. Most forecasters will make some claim of accuracy, and many remind you of good forecasts and ignore the bad ones; but beware of anyone who cannot back such claims with verifications of many forecasts.

Among other relevant activities were specialized forecasts for activities such as balloon competitions, and yacht and solar car races for several of University of Michigan's teams. I researched solar energy periodically since 1984, and wrote many FORTRAN programs for data analysis and solar energy calculations. Math is a special skill of mine, particularly calculations; which with my programming skills and formal meteorological study is very helpful for research.

Specialties

Though I can do a good job forecasting any aspect of weather for any location, I do best for the Poconos & surrounding region and southeast Michigan. The former because I am now becoming familiar with local effects the surrounding terrain can cause, and the latter because I lived there most of my life. Most common applications for these forecasts would be snow removal, lawn care and landscaping, and evaluation and forecast of the solar energy resource, including estimates of amounts collected on a surface of any orientation during any conditions for any time period.

I can also effectively research many meteorological topics of interest, with high accuracy and

attention to detail.

Reference

I can provide you with an excellent reference from A-1 Lawn Care of how my forecasts helped their snow removal and lawn care operations in the Ann Arbor, MI vicinity for more than the past 6 years.

Home Page

Personal Information - Joseph Alan Bartlo

This won't be a soliloquy regarding my life, but you may be wondering about the person writing these pages; so I decided I'll let the proverbial cat out of the bag. Below are 2 photos - 1 formal & 1 in my natural environment ☺

The latter was near the end of a snowfall of slightly more than a foot during 29-30 December 1997.

Other than forecast weather & shovel snow, I do many other things such as run, catch bass, and play golf and pocket billiards. I was gonna say *I enjoy*..., but running up these small hills can be like hell, and trying to make all those balls frustrating ☹ I also do some other forms of work - mostly landscaping. Some time I may wish to finish atmospheric science doctoral study which I began. Many influential people made me their enemy though, which makes doing almost anything requiring cooperation very difficult. I suppose that 3 the words which describe my philosophy are better, further, faster.

I live with my mother Connie - a chef of the highest order, with talents for poetry and gardening. She is active in the Monroe County Open Space Committee and secretary of the Rotary Club of Mount Pocono, PA.

I decided to remove the religious discussion from my site, though my name and its origins are as previously stated. Perhaps if I sometime see a significant amount of evidence supporting a religious belief I'll change my mind. I am not only referring to the lack of acts of divine intervention and the constant suffering some people endure, but also that I can generally expect the same good / bad things from a person regardless of what (s)he claims to believe. The more I search the many gospels and related writings to try determining what about them is true, the more I liken myself to someone perhaps 1000 years from now playing ancient advertisements, trying to determine if the Energizer bunny really kept going and going and

going - or some such thing. Evangelists were likewise trying to sell religions to people, and their writings were almost as certainly exaggerated, altered, and designed to accomplish their specific purposes - regardless of how true or false some of the facts or prophecies (such as Matthew 24) might've been. There are obviously some things to be learned from religious writings though.

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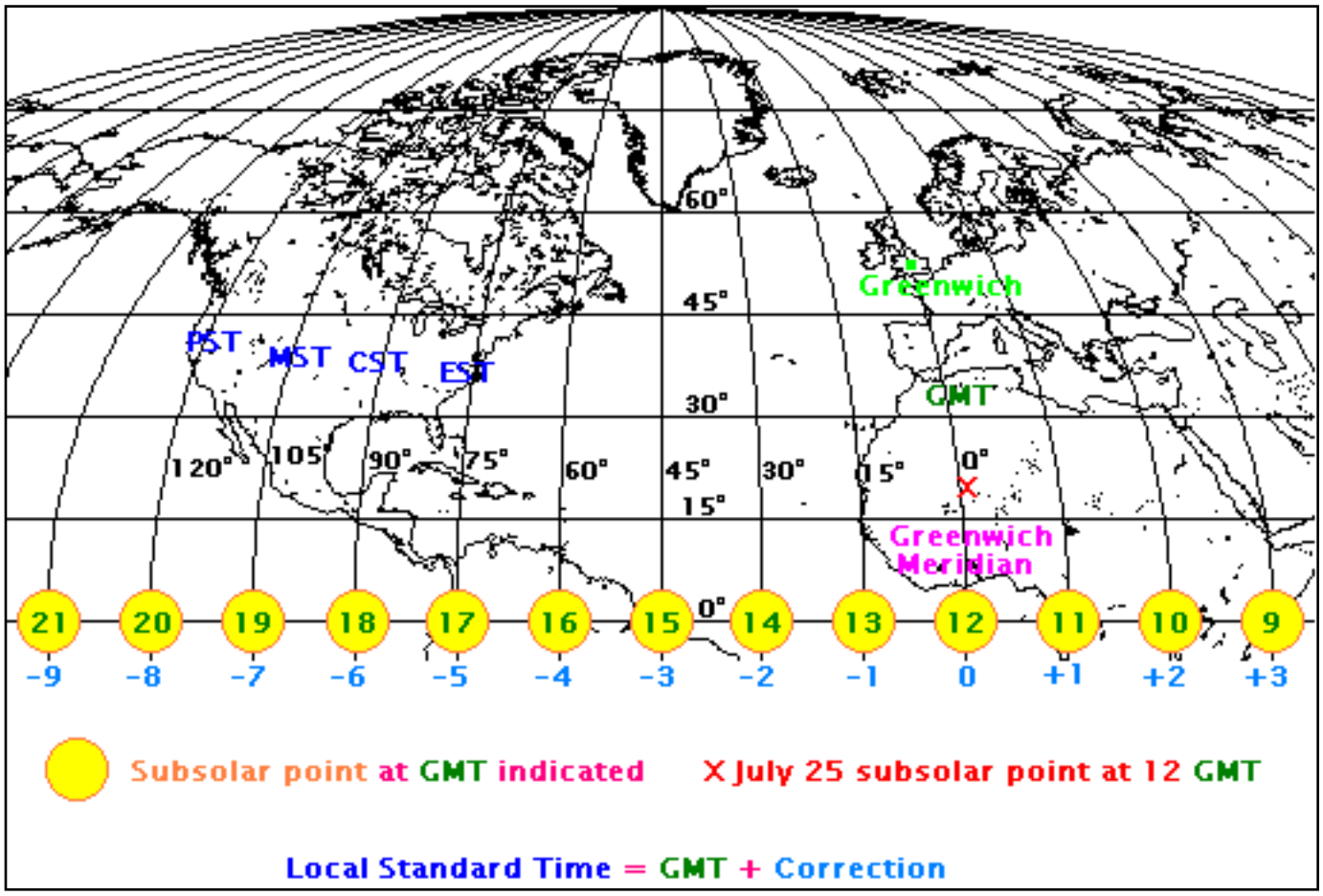
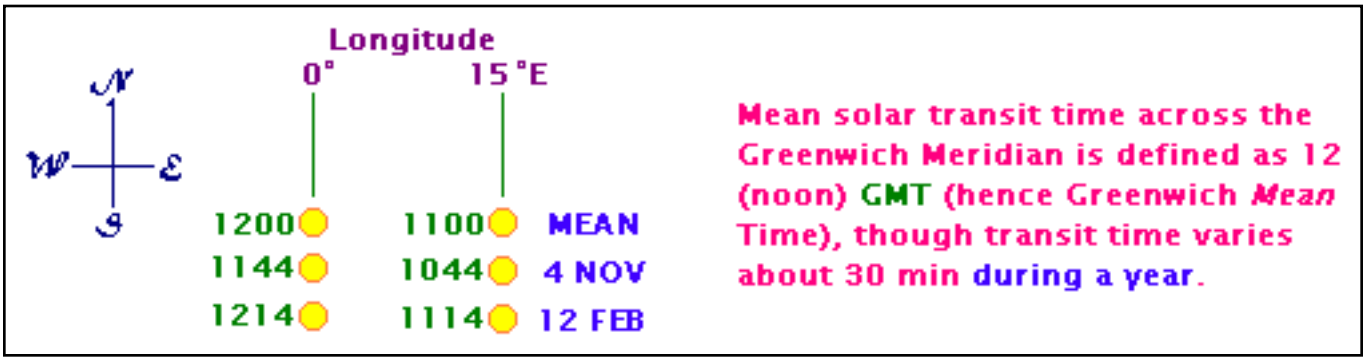
Greenwich Mean Time (GMT) Conversion

GMT relates with local standard time as illustrated below :



Basis for Greenwich Mean Time is Greenwich, England (position not shown precisely on map, unfortunately). 0° longitude is the Greenwich Meridian, and poisitive west longtiudes (and latitudes) are labeled (base map obtained from Xerox Parc Map Viewer). Average subsolar point (place on Earth our sun is directly above) is indicated for hourly GMT times. *Average* is an important word regarding this. The subsolar point varies between -23.44° & +23.44° latitude during a year, and moves approximately 3.7° east/west from its average position during a year, as illustrated for July 25 (position does not change much for the same time each year). Thus, basis for Greenwich Mean Time is mean solar transit time across the Greenwich Meridian (please notice correction) :



UTC (Coordinated Universal Time) is obtained from coordinated measurements at many worldwide observatories and contains small corrections wth respect to GMT. Thus, it is the official time standard, though nearly same as GMT.

As the first diagram indicates, **local standard time can be easily calulated** if GMT (assumed = UTC for illustration) and base time zone longitude is known. E.g., basis for Eastern Standard Time (EST) is the 75° W meridian, thus :

EST = GMT - 5 hours

If GMT is < 0500, then (obviously) add 24 hours for calculation. I.e., if GMT = 0218,

EST = (2400 + 0218) - 0500 = 2118 = 9:18 PM

Coverting to daylight savings time is as simple as adding an hour (10:18 PM EDT for this example).

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