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# Drop Size Distributions and Related Properties of Fog for Five Locations Measured From Aircraft

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## ABREVIATIONS AND ACRONYMS

| | |
|---|---|
| AGL | Above Ground Level |
| CAT-I | Category I instrument landing system |
| d | Diameter of water drops |
| DH | Decision Height |
| FAA | Federal Aviation Administration |
| FLAPIR | Forward Looking Infrared and Lidar Atmospheric Propagation in the IR experiment |
| FSSP | Forward Scattering Spectrometer Probe |
| GMT | Greenwich Mean Time |
| ILS | Instrument Landing System |
| LWC | Liquid Water Content |
| MMW | Milimeter Wave |
| MVR | Median Volume Radius |
| NA | Not available |
| n | Number concentration |
| Nt | Total number concentration, total number of particles |
| OAP | Optical Array Probe |
| PMS | Particle Measuring System, Inc. |
| R | Range |
| r | Radius of water drops |
| RVR | Runway Visual Range |
| vis | Visibility |
| X | Obscuration |

Drop Size Distributions and Related Properties of Fog for Five Locations Measured from Aircraft

## SUMMARY

A Gulfstream II Aircraft was equipped with a wing pod-mounted Forward Scattering Spectrometer Probe (FSSP-100) and an Optical Array Probe (OAP 200X or 200Y) during flight tests completed as part of the FAA/DoD/Industry Synthetic Vision Technology Demonstration Program. Flights were made to 27 airports to look at various meterological and runway conditions. Among these flights were approaches to Vandenberg AFB, CA. Arcata, CA, Santa Maria, CA, Worcester, MA and Huntington, WV during August and September 1992 in fog. The aircraft made repeated descents on a three degree glide slope from the top of the fog to the surface or near the runway surface. Number concentrations of particles from 1 to 300 $\mu$m or from 1 to 4500 $\mu$m diameter were collected each second, averaged into 10 meter altitude intervals, and shown in three dimensional plots of altitude vs. concentration vs. size. The West Coast advection fogs had the highest concentration of large drops, with median volume radius of 6-11 $\mu$m (outside of drizzle). There was typically a maximum number density for drops of 4-8 $\mu$m diameter in the lower altitudes and of 12 to 20 $\mu$m drops at higher altitudes. There were changes in the 10 to 15 minute periods between approaches of all fogs at all altitudes, but the general properties of relative maximum concentration, liquid water content (LWC) and median volume radius (MVR) at a given altitude changed least. Liquid water contents were high (0.3 to 0.7 g $m^{-3}$) for all the advection fogs and increased with height. There was a shift toward larger particles at higher altitudes. Dissipating or mature fogs contained more large drops. The frontal fog at Worcester, MA was unique in that rain was falling into the low level stratus at first. Measurements in the one radiation fog were limited to 20 m altitudes and higher due to operational constraints. The largest drops and number concentrations were in the lower 50 m, and like the advection fogs, 8-11 $\mu$m drops had maximum concentration. These measurements compare favorably with others in gross properties but each fog is unique in many ways.

## 1. Introduction

Fog data presented in this paper were collected as part of the Synthetic Vision Technology Demonstration Program. This program was a government-industry effort led by the Federal Aviation Administration (FAA) to determine the feasibility of a combination of technologies to enable aircraft landing, takeoff, taxi and ground operations in very low visibilities. An image available from millimeter wave and infrared sensors was projected on a heads up display together with altitude, airspeed, velocity vector, glide slope, heading and other information for the pilot. A more complete description of this project is available in Burgess et al. (1992), Horne et al. (1992), and the Synthetic Vision final report to be released by the FAA shortly (Burgess et al. 1993).

Particle size data were collected to aid in understanding the performance of candidate Synthetic Vision Sensors. The drop size distributions were used to assess attenuation by scattering and absorption which are proportional to the cross sectional area of the particles and liquid water content (particle volume) respectively. The slant path drop size measurements through the stratus cloud, along the identical path as the sensors allowed a fundamental understanding of atmospheric effects and verification of theoretical predictions (Burgess and Hayes 1992). Preliminary results are discussed in Horne et al. (1992).

The purpose of this report is to present and discuss the microphysical properties of the fogs encountered and their variation in time and space from the top of the stratus to the surface. Another objective is to compare this data with other published data and with physical models of fog properties to determine similarities and differences. Sources of potential errors are presented and possible impacts discussed.

## 2. Instrumentation

### *a. Description*

A Gulfstream II twin engine executive jet was modified to permit all particle size sensors to be suspended in pods from both sides of the wing (Fig. 1). This configuration provided the location of least disturbed air. For flights in fog, a Particle Measuring Systems, Inc. (PMS) forward scattering spectrometer probe (FSSP-100) leased from and operated by JTD Environmental Services, Inc., was mounted on one side of the wing, and an optical array probe (OAP 200X or 200Y) on the other depending on whether that day's mission was to look for fog or rain. Characteristics of these sensors are shown in Table 1. The theory and operation of the FSSP-100 and OAP sensors as well as a detailed description of the probes can be found in Baumgardner (1984), Baumgardner et al. (1984), and Knowlenberg (1970). Briefly, the FSSP measures light scattered by a thin (0.2 mm dia.) laser in a sampling tube. A droplet crossing the beam produces a pulse in optical diodes whose amplitude is proportional to the drop diameter, index of refraction, laser beam wavelength, power, and solid angle over which the scattered light is collected.

The OAP operation is based on shadows produced by precipitation-size particles (0.1 to 4.5 mm) passing through a laser light source. In this case a linear array of photo detectors comprise the size measuring grid.

For aircraft flights to Vandenberg AFB, CA and Arcata, CA, the OAP-200X accompanied the FSSP-100. At Santa Maria, CA, Worcester, MA, and Huntington, WV, flights were conducted with the OAP 200Y as the second sensor. Fog (or haze) droplets less than two $\mu$m diameter, were not measured. Complementing the PMS probes were a resistive temperature device from Rosemont, Inc., and a Johnston-Williams hot wire LWC sensor. Liquid water content discussed in this report, however, was calculated independently from the particle size distributions.

*b. Calibration and Quality Control*

The FSSP-100 was calibrated by JTD personnel prior to each mission by using standard size glass beads: 3-9 $\mu$m, 10-15 $\mu$m, 15-25 $\mu$m, 25-35 $\mu$m and 35-45 $\mu$m. A water spray check ensured probe function. A description of the glass bead process is presented in Hovenac and Lock (1993). Since the index of refraction of glass beads is different from water, glass beads of one diameter are used to simulate scattering of water droplets of another diameter. This relationship is captured in a set of calibration curves where scattered power as a function of droplet diameter is calculated for water drops using Mie scattering theory.

The OAP sensors were calibrated using glass rods rotated by a motor and a spray check in a similar manner to FSSP calibration. A JTD technician was a part of the aircrew on each mission and monitored sensor performance through real-time printed data. Post flight, the recorded data was reviewed prior to final processing.

*c. Error sources*

Despite calibration and quality control, there are certain errors recognized and reported by many investigators inherent in the instrumentation, optics, sampling and sizing. Corrections for sampling errors were made in the first few size bins according to manufacturer's recommendation. Other errors result from fogging of the optics (Brenguier 1993) but were not present in these data due to the low altitude of these flights. More accurate MIE scattering calculations in the calibration curves is shown by Hovenac (1993) to improve results for particles greater than 10 $\mu$m. These new curves were not available, but would not alter the data reported here due to the small number count in the large size bins. Errors can result from coincidence and dead-time losses, as described by Baumgardner and Dye (1985). Particle concentrations are underestimated when two or more drops are co-resident in the beam or when particles pass through during an electronic delay following each detected particle. These errors can be 15% for concentrations greater than 500 $cm^{-3}$ which were rarely observed above the 2 $\mu$m dia. minimum size radius in our FSSP-100 configuration. Finally, there is an error due to the

sampling rate (1 sec), small optical area (0.35 $mm^2$), and low number counts in the upper channels of each sensor. This error, as discussed in the result section, underestimates the number of drops per $cm^3$ if only one sensor is used. Concentrations of $10^{-2}$ and below per $cm^3$ can be missed in the upper 3-4 bins of the FSSP-100. All these errors were considered when estimating the sizing accuracy of ± one range bin for each probe.

## 3. Procedures

FAA approval was obtained prior to aircraft approaches in fog conditions below CAT-I minimums. For the West Coast locations, there was considerable coordination with airfield managers, air traffic controllers, and weather and maintenance personnel prior to operations at their airfields. In some cases, these approaches and landings were made in conditions below the published minimums but within the special approval envelope for the experimental category aircraft capable of providing the runway image to the pilot. All approaches in fog reported in this paper were made on a nominal CAT I instrument landing system (ILS) three degree glide slope following published procedures. This scenario and the distances applicable are shown in Fig. 2. Drop size data were collected, monitored, and stored from the time of cloud penetration, as indicated by the measurement of liquid water from the Johnston Williams LWC probe, until touchdown or the beginning of a go-around. The data were reduced and processed by JTD into particle concentrations according to PMS published procedures using airspeed and known sensor aperture. Output was the number of particles per cubic meter in each of 30 size bins (15 for each probe). Data were available at one-second intervals as shown in Fig. 3. One second corresponds to 70 meters in slant path distance through the cloud and four meters vertical distance at typical approach speeds. These one-second observations were averaged into 10 meter height intervals using barometric and radar altitudes. Typically, 2-3 seconds worth of data were collected in a 10 meter vertical interval. All data at and below the 10 m altitude interval were averaged and applied to that interval. The lowest altitude achieved often contained 10 or more one-second observations due to the touch and go, landing, and go-around occupying more time at the lowest altitude. The number of seconds in each 10 m altitude is shown in the Appendix.

## 4. Results

Droplet spectra have been shown in a number of ways. One common form used here is the function n(r) where n(r)dr is the number of droplets per unit volume in the radius interval (r, r+dr). The function $r^3$ n(r) is also calculated since $4/3\ \pi r^3 n(r)\ dr$ is the contribution of drops in dr to the LWC or water volume. The summation over all size bins is the total water volume which would have to be penetrated by any sensor on board the aircraft. The LWC contributes the most to millimeter-wave attenuation in the small drops of the fogs. The median volume radius is a parameter that divides the LWC in half for a given altitude and is calculated for all data collected. This parameter, together with the total number of particles (Nt) (per $cm^3$) at that altitude represent the gross

properties of the fogs (stratus) as a function of height. Finally, the cross-sectional area of particles ($\pi r^2$ n(r)dr) integrated over all dr is sometimes shown since it primarily affects the scattering part of attenuation for electromagnetic waves. Scattering efficiency is greatest when the wavelength of the sensor equals the drop size and is significant for drops larger than the wavelength.

Because the number concentrations can span eight orders of magnitude, the logarithm of number concentration is shown. A zero number count is converted to zero in the plots. Unfortunately, the logarithm plots hide much of the interesting characteristics of the drop size distribution, so the basic number concentration in each size bin for the larger concentrations are also shown. When data from both sensors on board the aircraft are combined in the plots, the concentration is divided by the bin size (3, 20 or 300 $\mu$m) for a fair comparison. All the basic data and primary parameters are shown in the appendix. Plots of combined FSSP and OAP data should show 30 bins or 28 bins. The midpoint diameter is labeled on the axis. For the OAP 200X, there is an overlap in the first two channels. In order to preserve the time resolution of the 3 $\mu$m bins, the first two OAP 200X bins were not used in the plots or parameter calculations.

For each location where flights were made into fog, three-dimensional plots of number concentration vs. altitude vs. size bin are presented. The data are discussed as a vertical profile even though 3800 m of horizontal distance was traversed on the 3 degree glide slope from an altitude of 200 m. Also, each approach took anywhere from approximately a minute to more than 5 minutes, depending on starting altitude (determined by cloud top at all places except Worcester, MA). Most of the fogs encountered were mature advection fogs which were sampled from their most intense (with respect to minimum surface visibility) phase to various stages of dissipation. The West Coast fogs formed over the ocean where ample large salt condensation nuclei exist. The drop sizes measured are large but change with time and altitude. A series of charts will show the time evolution and vertical variation of microphysical properties for each location. A summary of flights and associated surface weather observations (in standard airways code) are shown in Table 2. Times are rounded to the nearest minute. These flights are discussed in the following sections.

### *a. Vandenberg AFB, CA*

Vandenberg AFB is located 220 km northwest of Los Angeles on the north end of Point Arguello. A surface wind from the NW will produce on-shore flow. Runway 12-30 is 112 m above sea level. The NW end is just 5 km from the Pacific Ocean. On August 27, 1992 there was a very weak surface pressure gradient NW to SE. Fog over the cold water moved inland the previous evening and by 1455 G mT was producing a 100 ft. ceiling (vertical visibility into the obstruction) and prevailing visibility of 1/8 statute miles. Typical of these fogs was a strong temperature increase with height (inversion) to the top of the stratus (Fig. 4). Surface conditions changed during the 45 minutes of the data collection which began at 1500 G mT. Both the temperature and dew point increased at

the surface during the hour from 1455 to 1555 G mT from 54/53 F to 57/57 F. The visibility improved slightly from 1/8 to 3/16 mile. Surface wind was 3 m $s^{-1}$ or less from the NW. The top of the stratus changed from 190 m at 1500 G mT to 250 m at 1556 G mT, but the ceiling remained 100 ft obscured at the surface.

Both the FSSP-100 and OAP-200X recorded particle sizes during each approach which lasted about 1 minute. There were 7 approaches as shown in Table 2 but the first approach was a high altitude go-around, and the data were not used. In all plots that follow each mark on the altitude axis corresponds to a 10 meter interval from the top to the bottom of the approach, even if space does not allow printing all the values. The same is true for the drop size labels. The first bin midpoint is always 3.5 $\mu$m representing the 2-5 $\mu$m diameter range. The last entry on the drop size axis will either be 45.5 for the FSSP-100 data alone, or 300 for OAP-200X and 4500 for OAP-200Y. Thoughout this report, data for more than one approach are shown such as in Fig. 5 where three approaches are shown as a time sequence about 10 minutes apart.

Particle concentrations increase with altitude for most particle sizes but not consistently (Fig. 5). During the first two approaches, there was a pronounced peak in concentration (200 $cm^{-3}$) of 5-8 $\mu$m dia. drops at 180 m altitude. By 1556 (Approach -7) concentrations increased in the middle of the cloud (100 to 160 m). In the last 3 approaches, a bimodal distribution is apparent but not as pronounced as in other fogs. There is a peak in concentration near the surface for smaller drops and at high altitudes for larger drops. Drops as large as 25 $\mu$m have concentrations of tens per $cm^3$ but drops up to 160 $\mu$m diameter have been counted by the OAP-200X. These drops have concentrations of a few hundred per $m^3$ (Fig. 6). Note that the logarithm plot shows the complete spectrum where the characteristic log-normal shape is apparent although the detail is obscured.

The change in concentration with time at a fixed altitude is shown in Fig. 7 for 20 m and 80 m respectively. There is an increase at first then a decrease later for the smallest particles at the 20 m level but an increase in concentrations of all sizes at 80 m.

The LWC increased with height, reaching 0.7 g $m^3$ in the first approach at 100 m altitude, but the maximum varied greatly from approach to approach as different parts of the cloud were sampled just 10 minutes apart (Fig. 8). In subsequent approaches the maximum LWC varied between 0.3 and 0.7 g $m^{-3}$ near the top 1/3 of the cloud. The median volume radius was highest (11 $\mu$m) in the lower part of the stratus at first but varied between 6 and 10 $\mu$m at 80 to 120 m altitude thereafter. The total number of particles (NE) counted in all size bins increased slightly with both time and height (Fig. 9).

Discussion:

The Vandenberg case represented a pristine marine fog with little overland trajectory to influence drop sizes via increased condensation nuclei. Although drops less than 2 $\mu$m in dia. could not be measured, some authors claim that it is unlikely that the aircraft sensors would have encountered the $10^3$ to $10^4$ per $cm^3$ number concentrations of these haze droplets of inland fogs (Hudson 1978). The bimodal nature of fogs has been noted by others (Pinnick et al. 1978, Pilie et al. 1975 and Rogers and Yau 1988) and will be shown repeatedly at other locations discussed later. The cause has been postulated to be the mixing of dry air at the top causing more rapid evaporation of the smaller drops there coupled with regeneration through condensation and advection of the smaller drops near the surface. However, there is considerable non homogeneity as indicated by changes in the number concentration during the 10 minutes between observations in different parts of the cloud. Even the differences of fog characteristics in horizontal distances of hundreds of meters can be significant as indicated by runway visual range (RVR) measurements concurrently at different ends of a runway and for different runways at the same airport. For this fog absorption of millimeter wave energy was greatest due to the high LWC. Scattering by these large drops will and did influence both the optical and 3-5 $\mu$m IR sensor carried on all flights. This fog and all fogs encountered were opaque to the eye and IR through its entire volume. There is significant IR attenuation due to water vapor absorption and inherent low thermal contrast of the scene as well.

*b. Arcata, CA*

Arcata is a small town in Northern California about 115 km south of the Oregon border. The airport is about 10 km north of the city adjacent to the Pacific coast. The elevation of the field is 66 m with an increase in height of 12 m from the sea end to inland end of the runway. Much higher terrain is east and south of the airport. There is a 46 m embankment at the end of runway 32. Fog is a frequent summertime occurrence owing to the proximity of the cold ocean water and frequent sea to land air movement. On August 28, 1992 there was a weak on-shore pressure gradient. Surface winds were less than 3 m $s^{-1}$. Fog moved inland the previous evening and was at its worst (minimum surface visibility) during the time of the first approach, 1520 G mT. At this time the ceiling was zero with prevailing visibility 1/8 mile and RVR 600 ft. Temperature/dewpoint was 49/49 but rose to 51/51 by the 8th approach at 1652 G mT. At 1600 the ceiling lifted to 100 ft. and visibility improved to 3/8 mi. RVR varied between 600 and 1400 ft. until 1650 G mT when it rose to 1200 to 5000 ft. During the last two approaches, 1817 and 1828 G mT, the ceiling lifted to 300 ft. and visibility rose to 1 1/4 miles indicating significant dissipation. The top of the fog/stratus rose from 100 m at first to over 300 m by the end of the approach sequences. On 8 of the 10 approaches, the aircraft descended to the surface of the runway by special permission.

Drop size distributions are shown in Fig. 10 and in greater detail for the larger concentrations in Fig. 11. Note that there were drops as large as 180 $\mu$m, although their number densities were on the order of a few tens per cubic meter per $\mu$m as in the Vandenberg fog. Due to small collection area, short dwell time, and few particles in the 38 to 47 $\mu$m region, there are often no particles counted, yet drops are present in these sizes as shown by the anomalous gap in Fig. 12. The omission of particle counts in this size region affected gross properties by 2.0% or less.

As in the Vandenberg data the multimodal nature of the number densities can be seen in Fig. 11. As the stratus grows in vertical extent from 100 m to 200 m over 30 minutes, the number concentrations in bin 4 (11-13 $\mu$m) increase to 43 $cm^{-3}$ per $\mu$m in the top 60 m of the cloud, whereas the concentration of smaller drops (2-5 $\mu$m) continue to peak in the lowest 40 m. The number count falls off rapidly, changing by 2 orders of magnitude by 17-20 $\mu$m dia. sizes. In Fig. 11b (approach 6) the number of intermediate (bin 2, 3) drops and large drops have increased from 15 to 50/$cm^3$/$\mu$m in an hour. The larger drops, on the other hand, extend to lower altitudes but their number densities change little in the top 30 m of the cloud. This trend continues through 1652 G mT where the peak number density of 78 $cm^{-3}$ per $\mu$m is reached at 230 m, 60 m from cloud top. The last two approaches, 1816 and 1828 G mT (Fig. 13), were conducted in a rapidly dissipating stage when the ceiling rose to 300 ft. and tops became more irregular. Also, the particle densities of all drops decreased in the lowest 100 m of the fog. The change in number concentration with time at the 20, 80 and 160 m altitudes is shown in Fig. 14.

There appears to be a cycle of increase in concentrations at first then a decrease about every 30 min for the first 7 approaches. The temperature inversion is still pronounced (Fig. 15) for all approaches. The LWC increases with height from 0.05 to 0.25 g $m^{-3}$ to within 30 m of the cloud top and increases with time reaching nearly 0.6 g $m^{-3}$ by 1652 G mT (Fig. 16). As the fog begins to dissipate, the LWC decreased to a maximum of 0.45 g $m^{-3}$ at 1828 G mT (Fig. 28). The median volume radius, on the other hand, also shown in Fig. 16, remained nearly constant at 4-6 $\mu$m. The only difference was in the lowest 10 m of the fog where the MVR approached drizzle drop size (100 $\mu$m) for some of the approaches. There was drizzle reported by the pilots. Finally, as indicated in the number density plots and Fig. 17, the Nt of particles in all size bins increases with altitude in the first 40 m then begins an erratic decline.

Discussion:

The Arcata fog is similar to Vandenberg where nuclei from ground and industrial sources have not had much influence. The LWC, while less than Vandenberg, is still relatively high and in the top half of the cloud. That, coupled with the median volume radius in the 4-6 $\mu$m range, will present difficulties for sensors whose wavelengths are less than 12 $\mu$m due to scattering. Absorption of millimeter wave energy will be noticed, especially for the higher frequencies (94 GHZ and above), when looking through the

entire cloud LWC volume. At Category I decision height, 200 ft (60 m), 2/3 of the liquid is above the path, but the drops still remain relatively large. By the dissipation stage, this cloud becomes more like a stratocumulus.

*c. Santa Maria, CA*

Santa Maria is 22 km Northeast of Vandenberg AFB, CA. It is 18 km from the Pacific, further inland than the previous locations. Like the other advection fog situations, the low level flow was from the NW where there is relatively flat terrain to the coast. The airport elevation is 79 m. Although the humidity was 100%, the fog was nearing a dissipation stage more so than the others. In the 20 minutes between approach 1 and 3 (approach 2 data is missing), the ceiling changed from 100 ft. obscured to 200 ft. overcast and the visibility changed from 1/4 mile to 3/8 mile. The second sensor available for this flight was a rain probe (OAP 200Y) which did not contribute to the knowledge of fog microphysics, since there was no rain. The discussion will be limited to data from the FSSP-100 sensor.

The drop size spectrum (Fig. 18) is very similar to those of Vandenberg and Arcata. The maximum number concentration reached about 170 $cm^{-3}$ near the top of the fog; but unlike the previous fogs, the intermediate drop sizes (11-14 $\mu$m) had this large number concentration (Fig. 19). Here there is a trimodal case; a lower peak concentration for 2-5 $\mu$m drops, mid level peak for 8-11 and 11-14 $\mu$m drops and high altitude peak of the biggest drops with significant (1 $cm^{-3}$ or above) number counts of 14-20 $\mu$m size drops. The temperature increase with height was about the same magnitude as at the other locations (Fig. 20). The LWC of 0.1 to 0.4 g $m^{-3}$ was also very similar with higher values near the top of the cloud (Fig. 21). The median volume radius was slightly more erratic but still showed an increase in the lowest 50 m of the fog which indicates the contribution of the smaller number concentration of the large drops. Total number of particles (350-400 $cm^{-3}$) is also nearly the same as the other advection fogs (Fig. 22).

Discussion:

With addition of more varied condensation nuclei farther inland, there should be a larger number of the smaller drops, but this was not observed. Some broadening of the spectrum is apparent at mid levels of the cloud, but this may be due to the fog nearing more a dissipation stage. Attenuation characteristics for visible up to radar frequencies should be similar to those discussed previously.

*d. Worcester, MA*

Worcester is located 73 km west south west of Boston's Logan Airport. The remains of tropical storm Danielle were located over Northern NJ and moving NE. This storm, coupled with high pressure over Maine, produced a NE flow of 4-5 m $s^{-1}$. There

was a warm front across New York state to the south. There was wide spread stratus, fog and rain north of this front with ceilings about 100-200 ft. and prevailing visibilities 1/4 to 3/4 miles in light rain and fog. During all the approaches to Worcester, the sky condition was 100 ft. obscured. There were layered clouds above the low stratus so no definite cloud top and no inversion existed; therefore, the beginning of data collection was somewhat arbitrary. Attempts were made to begin the data collection when encountering the lowest cloud layer. During the last two approaches, the rain changed to drizzle. Rain rates of 1-3 mm/hr were calculated from the drop size distribution for the lowest 80 m of cloud in the first 5 approaches. Rain rates were significantly less for the last 3 approaches.

Fig. 23 shows the broadened drop size spectrum at all altitude with number concentrations as high as $10^3/m^3$ even at 300 $\mu$m drop size. The negative numbers result from the normalization for size bins (dividing by 300 in this case) where number counts are less than 300 $m^{-3}$. From the shape of the FSSP-100 drop size spectrum (Fig. 24) the fog part of the cloud system extended to about 200 m. The spectrum is more sharply peaked in the 5-8 $\mu$m size region in the middle of the stratus where number counts reached 280 per $cm^3$ compared to 60 for Arcata. The tri-modal nature is still evident with low altitude peaks of the smallest drops measured (3-5 $\mu$m) and a peak of drops 11 to 17 $\mu$m at high altitudes in addition to the sharp peak in mid levels of 5-8 $\mu$m drops. The approaches in the late afternoon (Fig. 25, 26) revealed a similar spectrum shape, but there appear to be two regions of low stratus; one from 20 m to 200 m and another from 200 to 340 m. Number concentrations are similar in both regions.

Liquid water content is influenced by the rain drops (Fig. 27). At 1723 G mT the rain influenced the areas where fog drop contributions were small ($\leq$ 0.05 g $m^{-3}$). At 1734 and 1745 G mT rain drops contributed 80% of the LWC near 300 m altitude. At 1755 G mT the most significant contribution is at 240 and 120 m. There was also a significant contribution for all approaches near the surface. The range of LWC, 0.1 to 0.4 g $m^{-3}$, is similar to the advection fogs of the West Coast. By late afternoon the LWC came predonimately from fog drops and drizzle (Fig. 28). The median volume radius also shown in Fig. 27 shows the significant effect of the rain drops near the top and bottom of the clouds. The total number of drops (Fig. 29) is equivalent to that of the other fogs despite the increase in the number of big drops (with very low number concentrations).

Discussion:

This situation of rain and fog with ceilings below CAT-I minimums is not uncommon in overrunning warm frontal fogs of mid latitudes. The most serious consequence is the effect of the rain on millimeter wave sensor performance. Even rain rates of a few mm/hr can attenuate tens of db/km of the radar signal (Battan 1959) such that the image of the runway is lost above CAT-I decision height. Backscatter becomes an increasing problem with rain of any significant drop size since it is proportional to the

sixth power of the average drop diameter. The return signal from the rain could obliterate any signal from the ground. The same adverse effects discussed earlier for IR wavelengths would apply here as well. If the rain increases at the expense of the fog, then optical visibility might be adequate for aircraft operation below the clouds.

*e. Huntington, WV*

At Huntington, data were collected on the only inland radiation-type fog, but it was so shallow (though optically and IR dense) that the aircraft had trouble getting into the fog due to operational constraints of airfield minimums. There were six approaches with data for the lowest layer (10 m) only available for one. The Huntington airport is in NW West Virginia, near the Ohio border, and adjacent to the Ohio River and some of its tributaries. The presence of the water undoubtedly influenced the formation of and properties of the fog. There was a weak ridge of high pressure over State College, PA. A cold front had passed through the area the previous day. The surface winds were very light with clear skies, all the ingredients necessary for fog. Fog formed in the early morning hours and by the time of the first approach (1147 G mT) the ceiling was 100 ft. obscured with zero prevailing visibility. By 1155 9/10 of the sky was obscured, but there was no ceiling even though the prevailing visibility was just 1/16 mile. These conditions prevailed through the last approach at 1247 G mT. Only the fog data from the FSSP sensor will be discussed. The cloud top rose from about 100 m to 160 m before the cloud began to evaporate. Data were collected only for the first two approaches within 20 m of the ground where the highest concentration of particles were found. The other approaches terminated at 40 m or above.

There were significant numbers of drops with sizes up to 17-20 $\mu$m and $10^4$ particles per $m^3$ as large as 45 $\mu$m (Fig. 30). It is likely that larger numbers of smaller haze drops (< 1 $\mu$m radius) existed in this fog but could not be measured. The number concentrations observed during the first two approaches were maximum at 5-8 $\mu$m at the lowest altitude. The details for higher number concentrations are shown in Fig. 31 for the first three approaches.

Liquid water content was very low until 1235 G mT when values of 0.13 g $m^{-3}$ (Fig. 32) were calculated from the observed drop distribution. In later aircraft approaches, the LWC always peaked at the lowest altitude corresponding to the high number concentrations; however, the lowest altitude on several of the approaches was halfway into the shallow cloud. The median volume radius remained quite large (5-8 $\mu$m) within 50 m of the ground (Fig. 32). Temperature was nearly constant at 12 C through the top 3/4 of the cloud. The total number concentration (Fig. 33) reached a maximum of 170 per $cm^3$ at 40 m for approach 2. Had there been a capability to measure smaller drops, this count would most likely have been much higher.

Discussion:

The high numbers of relatively large drops (5-8 $\mu$m) was surprising for this shallow inland radiation fog. This fog, like all the others, was opaque to the optical (visible) and IR (3-5 $\mu$m) spectrum but presented no problems for the imaging radar. It is unlikely that an IR sensor of longer wavelength would have been any more effective due to scattering associated with the significant number counts of 10-16 $\mu$m diameter drops close to the ground.

**5. Comparisons with Other Measurements**

Microphysical parameters reported in the literature are highly dependent on the type of fog, the airmass in which it is embedded (supersaturation, temperature, humidity, condensation nuclei available, turbulence), time period of measurements, measurement technique, altitude of measurements, and stage of fog development. Prior to the 1970's, fog drop sizes were measured by impaction techniques (Piele 1975, Prokh 1974, Garland 1971, and Goodman 1977), by collection on spiderwebs (Arnulf et al. 1957), by early light scattering (Elridge 1961) and by Nephelometers (Dickerson et al. 1975). These measurements had significant limitations apart from the other factors influencing the measurements. For example, the impaction techniques required laborious, time consuming microscopic counting of craters made by drops. The smallest drops that could be reliably measured were on the order of 2 $\mu$m (Rhinehart, 1969). Corrections were needed for collection efficiencies and in the conversion to droplet concentration. Although still subject to errors and corrections for collection efficiency, the light scattering instruments of the 70's, 80's, and 90's offer near real-time measurement and effective calibration with known particle sizes when done carefully.

Results of previous fog data collection activity are summarized in Table 3. There have been several concerted international and multi-agency cooperative projects to measure fundamental properties of fogs. Some of these prior to the Synthetic Vision Program were Forward Looking Infrared and Lidar Atmospheric Propagation in the IR (FLAPIR) experiment (Koenig 1991), FOG-82 (Meyer et al. 1986), Meppin-80 (Lindberg et al. 1984), Po Valley (Fuzzi et al. 1992) and Graffenwohr (Pinnick et al. 1978). Note that the instrumentation used, drop size range and type of fog are shown. In several cases many observations taken at different times and locations were grouped together and the average for the entire grouping is presented.

The number concentration is a function of instrumentation bin size which in some cases was not reported (indicated as not available (NA) in the table). A reasonable assumption is that the values given are "per micrometer" unless indicated. From Table 3, the higher number counts in the submicron region are due most likely to haze particles. The maximum drop concentration for the size region, 3-20 $\mu$m, for both advection and radiation fogs range from 10's to 300 per $cm^3$. For radiation fogs, however, there are concentrations in the $10^3$ range at $\mu$m size and below.

The range of LWC maxima is from 0.1 to 0.4 g $m^{-3}$ for advection fogs and 0.1 to 0.7 g $m^{-3}$ for radiation fogs although there is great variability due to stage of development/ dissipation and altitude of the measurements. The "typical" characteristics of both types of fogs are shown by Kocmond et al. (1969) in Table 4. Up to five stages of development have been identified for radiation fogs. Each has identifiable fog characteristics (Juisto et al. 1983). The Synthetic Vision data show the variability of fog parameters in marine advection fogs as they begin to dissipate. Also, the vertical variation of parameters is even more pronounced than horizontal changes or time changes in most fogs. The measurements of LWC reported in this paper were as high as 0.7 g $m^{-3}$ in advection fogs with frequent values of 0.2 to 0.5 compared with the 0.17 value in Table 4.

The other drop size characteristics measured during the Synthetic Vision Technology Demonstration program are consistent with previous measurements. These are the only measurements made in fog showing drop size characteristics with both a vertical and a time dimension along the path of a landing aircraft.

## 6. Summary and Conclusion

Sequential 1-2 minute penetrations of the fog repeated every 10-20 minutes for about an hour reveal some consistency with respect to general characteristics and gross features such as LWC and MVR. The differences due to natural variability within the fog cloud are readily apparent as are the changes in a dissipating fog. All fogs contain number concentrations of tens to hundreds of drops per $cm^3$ per micrometer in the range of drop sizes from 2-25 $\mu$m diameter.

The advection fogs were found to contain number concentrations of $10^{-2}$ $cm^{-3}$ per micrometer for drops above 45 $\mu$m in many cases. The rain falling through the fog at Worcester, MA affected the fog drop spectrum; although it, too, when viewed alone showed many of the characteristics noted in number counts vs. drop size of marine advection fogs. There were multimodal tendencies in nearly all the fogs which tended to spread the spectrum when viewed over many altitudes. The one radiation fog encountered exhibited drops larger than expected although there are similar measurements of large drops in radiation fogs (Gerber 1991, Meyer et al. 1986). The variation of general fog characteristics with altitude and time is shown in Table 5.

The text book description of marine stratus clouds and their microphysical properties is the following: the mean droplet size increases with height, the spectrum is narrow due to growth of particles by condensation rather than coalescence, liquid water contents generally increase with height varying between 0.05 and 0.25 g $m^{-3}$, and the droplet concentration does not increase with height (Rogers and Yau 1989). The observations reported in the paper show a somewhat narrow spectrum where the total number of particles increases slightly with height and time, whereas drop sizes were bigger near the surface but changed little with height thereafter, and the droplet

concentration increased with height when several drop size bins are grouped together. The biggest difference is a greater range in liquid water contents from 0.05 to 0.7 g $m^{-3}$ for these measurements.

More measurements of radiation fogs made in different parts of the country (and the world) are needed to confirm the changes in stage of fog development and altitude. Also, more data are needed on the evolution of advection fogs, especially frontal fogs at inland locations.

While fog was not a limiting factor at radar frequencies with respect to the ability to image the runway from 80 m and below, more data are needed in high LWC fogs at inherently low contrast airports (contrast refers to the relative backscatter difference between the runway and grass or dirt border) and for more fogs with significant drizzle.

Finally, there is also a need to show the data in the context of functions such as the gamma or log normal distribution that capture their essence with a few statistics; then to develop limits of characteristic model parameters which impact performance of sensor systems contemplated for all-weather imaging of the runway.

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Table 1. Characteristics of Particle Measuring System, Inc. sensors

| Sensor | Drop dia. range | Bin size | Accuracy |
|---|---|---|---|
| FSSP 100 | 2 to 47 micrometers | 3 micrometers | ±1 bin |
| OAP 200X | 10 to 310 micrometers | 20 micrometers | ±1 bin |
| OAP 200Y | 150 to 4650 micrometers | 300 micrometers | ±1 bin |

Table 2. Approaches/Landings in fog for the Synthetic Vision Flight Test Program

| Flight Information | | | | Weather Conditions | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Location | Date | Number | Time (GMT) | Time (GMT) | Sky Condition | Visibility WX | Temp DwPt | Wind | Remarks |
| Vandenberg (VBG) | 082792 | 2 | 1500-1501 | 1455 | W1X | 1/8 F | 54 53 | 0101 | RVV 1200 |
| | 082792 | 3 | 1513-1514 | | | | | | |
| | 082792 | 4 | 1524-1525 | | | | | | |
| | 082792 | 5 | 1534-1536 | | | | | | |
| | 082792 | 6 | 1546-1547 | 1555 | W1X | 3/16 F | 57 57 | 3205 | |
| | 082792 | 7 | 1556-1558 | | | | | | |
| Arcata (ACV) | 082892 | 1 | 1520-1521 | 1459 | W0X | 1/8 F | 49 49 | 0704 | R32VR 06 |
| | 082892 | 2 | 1537-1537 | | | | | | |
| | 082892 | 3 | 1548-1548 | | | | | | |
| | 082892 | 4 | 1559-1600 | 1555 | W0X | 1/8 F | 50 50 | 2006 | R32VR 08V14 |
| | 082892 | 5 | 1617-1618 | | | | | | |
| | 082892 | 6 | 1628-1629 | | | | | | |
| | 082892 | 7 | 1640-1641 | | | | | | |
| | 082892 | 8 | 1652-1653 | 1650 | W1X | 3/8 F | 51 51 | 1604 | R32VR 12V50 |
| | 082892 | 9 | 1817-1817 | 1754 | W2X | 3/4 F | 52 52 | 2406 | R32VR 30V60 |
| | 082892 | 10 | 1828-1829 | 1827 | W3X | 1 1/4 F | | 2607 | |
| Santa Maria (SMX) | 092392 | 1 | 1440-1441 | 1351 | W1X | 1/4 F | 55 55 | 3103 | |
| | 092392 | 3 | 1501-1502 | 1450 | -X E2 OVC | 3/8 F | 55 55 | 3103 | F8 |
| Worcester (ORH) | 092692 | 1 | 1723-1725 | 1650 | W1X | 1/2 VR-F | 53 53 | 0609 | Visibility 1/4-3/4 |
| | 092692 | 2 | 1734-1736 | | | | | | |
| | 092692 | 3 | 1745-1747 | 1750 | W1X | 1/2 VR-F | 55 54 | 0609 | Visibility 1/4-3/4 |
| | 092692 | 4 | 1755-1757 | | | | | | |
| | 092692 | 5 | 1806-1808 | | | | | | |
| | 092692 | 6 | 2116-2117 | 2050 | W1X | 1/4 L-F | 55 55 | 0610 | |
| | 092692 | 7 | 2126-2128 | | | | | | |
| | 092692 | 8 | 2139-2141 | 2150 | W1X | 1/4 L-F | 54 54 | 0608 | |
| Huntington (HTS) | 092892 | 1 | 1147-1147 | 1050 | W1X | 0 F | 51 50 | 0000 | |
| | 092892 | 2 | 1155-1155 | 1154 | -X | 1/16 F | 50 50 | 0000 | F9 |
| | 092892 | 3 | 1203-1204 | | | | | | |
| | 092892 | 4 | 1214-1214 | | | | | | |
| | 092892 | 5 | 1235-1235 | | | | | | |
| | 092892 | 6 | 1247-1247 | 1257 | -X | 1/16F | 53 52 | 0000 | F9 |

Table 3. Fog parameter comparisons

| Fog Type | Location | Date | Max number of drops (per $cm^3$ ) | Radius of maximum (µm) | Median volume radius (µm) | Liquid water content ($gm^3$) | Instrumentation and size range (µm) | Min. surface visibility (m) | Remarks | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| Advection | Hanscom AFB, MA | Nov. 18, 1958 | 497<br>180 | 1-2<br>8-16 | NA | 0.36 max | Optical particle counter Armour Research foundation<br>I-64 | 60 | Sampling errors likely | Eldridge 1961 |
| Advection | Otis AFB, MA | July 11, 1980 | 1000<br>200 | <1.0<br>8 | 4-8 | 0.4 max<br>0.11 mean | FSSP-100<br>(PMS)<br>0.25-23.5 | NA | | Kunkel 1981 |
| Advection | Arcata, CA | June 24, 1968 | 95<br>30<br>1 | 5-10<br>15<br>70 | NA | NA | Impact on formvar solution<br>2-100 | NA | | Rhinehart 1969 |
| Advection | Arcata, CA | July 15, 1976 | 30,000<br>300<br>30 | 0.1<br>0.3-0.4<br>3-5 | NA | NA | Active Aerosol Spectrometer Probe<br>(PMS)<br>0.1-15 | NA | | Trusty 1978 |
| Advection | Nova Scotia (at sea) | May 18, 1977 | 30,000<br>0.2 | 0.1<br>7-8 | NA | NA | Active Aerosol Spectrometer Probe<br>(PMS)<br>0.1-15 | NA | | Trusty 1978 |
| Advection | San Fransicso, CA | July 17-18, 1974 | 88-99 | 3-5 | NA | 0.04 max | Impact on soot coated slide<br>2-50 | NA | Mean radius and liquid water increased with ht. | Goodman 1977 |
| Advection | Vandenberg AFB, CA | Summer 1971 | 10-20 | 8-10 | NA | 0.14 max<br>0.08 mean | Gelatin replication Cornell Aeronautical Laboratory<br>1.5-100 | 400 | | Mack et al. 1972 |
| Advection | Brunswick NAS, ME | July 16,27, 1990 | 10,000<br>30 | <1.0<br>2-4 | NA | NA | Rain spectrometer<br>(PMS)<br>0.1-150 | 250 | Part of the International FLAPIR | Koenig 1993 |

Table 3. Fog parameter comparisons (cont.)

| Fog Type | Location | Date | Max number of drops (per $cm^3$) | Radius of maximum (µm) | Median volume radius (µm) | Liquid water content ($gm^{-3}$) | Instrumentation and size range (µm) | Min. surface visibility (m) | Remarks | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| Radiation | Chemung River Valley Elmira, NY | Aug-Sept. 1970 | 12-25 | 9-3 and 6-12 | (2-4mean) | 0.2 max 0.06 typical | Impact on Gelatin Slides 2-36 | 1000 | Bimodal after vis. minimum | Piele et al. 1975 |
| Radiation | Albany, NY | Oct. 10-14, 1981 | NA | NA | NA | 0.45 max 0.1-0.4 range | FSSP-100 (PMS) 0.1-47.5 | 80 | | Lala et al. 1982 |
| Radiation | Grafenwohr West Germany | Feb. 21-26, 1976 | 1000 100-300 | <1 6-8 | NA | 0.4 max 0.01-0.4 range | Classical scattering aerosol spectrometer (PMS) 0.2-40 | <1000 | Bimodal and increase particle size and concentration with height | Pinnick et al. 1978 |
| Radiation | Zhortnevoya Ukrain | 1959-1962 | 6-99 | 10 and 20-24 | NA | NA | Impact on oil coated slides 8-80 | 65 | | Prokh 1974 |
| Radiation | Albany, NY | Oct. 1977 | 400 80 | 0.5 to 1.0 10 | NA | NA | Royco optical particle counter 0.3-15 Gelatin Slides 2-46 | NA | | Meyer 1980 |
| Radiation | Po Valley, Northern Italy | Nov. 10-17, 1989 | NA | 10-20 | 20 | 0.7 max 0.1 to 0.3 typical | FSSP-100 0.5-47.5 | NA | | Fuzzi et al. 1992 |
| Radiation | Kanto Plain, Japan | Dec. 9,1985 | NA | 2-3 and 7-10 | NA | NA | Impact on colloidal film | 200 | | Kurita et at. 1990 |

Table 3. Fog parameter comparisons (concluded)

| Fog Type | Location | Date | Max number of drops (per $cm^{-3}$) | Radius of maximum (µm) | Median volume radius (µm) | Liquid water content ($gm^3$) | Instrumentation and size range (µm) | Min. surface visibility (m) | Remarks | Reference |
|---|---|---|---|---|---|---|---|---|---|---|
| Advection | Vandenberg AFB, CA | Aug. 27, 1992 | 200 | 5-7 | 7-11 | 0.73 max | FSSP-100 and OAP 200y 2-300 | 201 | Bimodal | This report |
| Advection | Arcata, CA<br>Arcata, CA | Aug. 28, 1992<br>Augs. 28, 1992 | 235<br>320 | 11-14<br>11-14 | 6-8<br>26 max<br>52 max | 0.57 max<br>0.43 max | FSSP-100 and OAP 200x 2-300 | 183 | Max parameters at upper altitudes bimodal | This report |
| Advection | Santa Maria, CA | Sept. 23, 1992 | 150 | 5-8 | 6-11 | 0.46 max | FSSP-100 2-47 | 402 | Multimodal | This report |
| Frontal/w rain<br>Frontal/w drizzle | Worcester, MA | Sept. 26, 1992 | 280<br>187 | 5-8<br>5-8 | 1000 max<br>9 | 0.36 max<br>0.34 max | FSSP-100 and OAP 200y 2-4500 | 402 | Rain and fog drizzle and fog | This report |
| Radiation | Huntington, WV | Sept. 28, 1992 | 57 | 8-11 | 8 | 0.18 max | FSSP-100 2-47 | 0(prevailing) | At lowest level measured (60 m) | This report |

Table 4. Typical fog properties (from Kocmond, et al., 1969)

| Fog Parameter | Inland Radiation | Coastal Advection |
|---|---|---|
| d (μm) | 10 | 20 |
| Range of d (μm) | 5-35 | 7-65 |
| LWC ($gm^{-3}$) | 0.11 | 0.17 |
| n ($cm^{-3}$) | 200 | 40 |
| Visibility (m) | 100 | 300 |

Table 5. Changes with altitude and time for fog charactertistics

Altitude Changes

| Parameter | Locations | | | | |
|---|---|---|---|---|---|
| | Vandenberg AFB, CA | Arcata, CA | Santa Maria, CA | Worcester, MA | Huntington, WV |
| LWC | increases | increases | increases | variable | increases |
| Nt | increases | increases then decreases | increases then decreases | increases then decreases | variable |
| MVR | decreases then increases; peak near surface | constant peak near surface | constant peak near surface | variable | decreases then increases |

Time Changes

| | Locations | | | | |
|---|---|---|---|---|---|
| | Vandenberg AFB, CA | Arcata, CA | Santa Maria, CA | Worcester, MA | Huntington, WV |
| LWC | variable | increases | increases | increases then decreases | increases |
| Nt | decreases then increases | increases | increases | slight increases | increases |
| MVR | decreases | constant | constant | increases | constant |

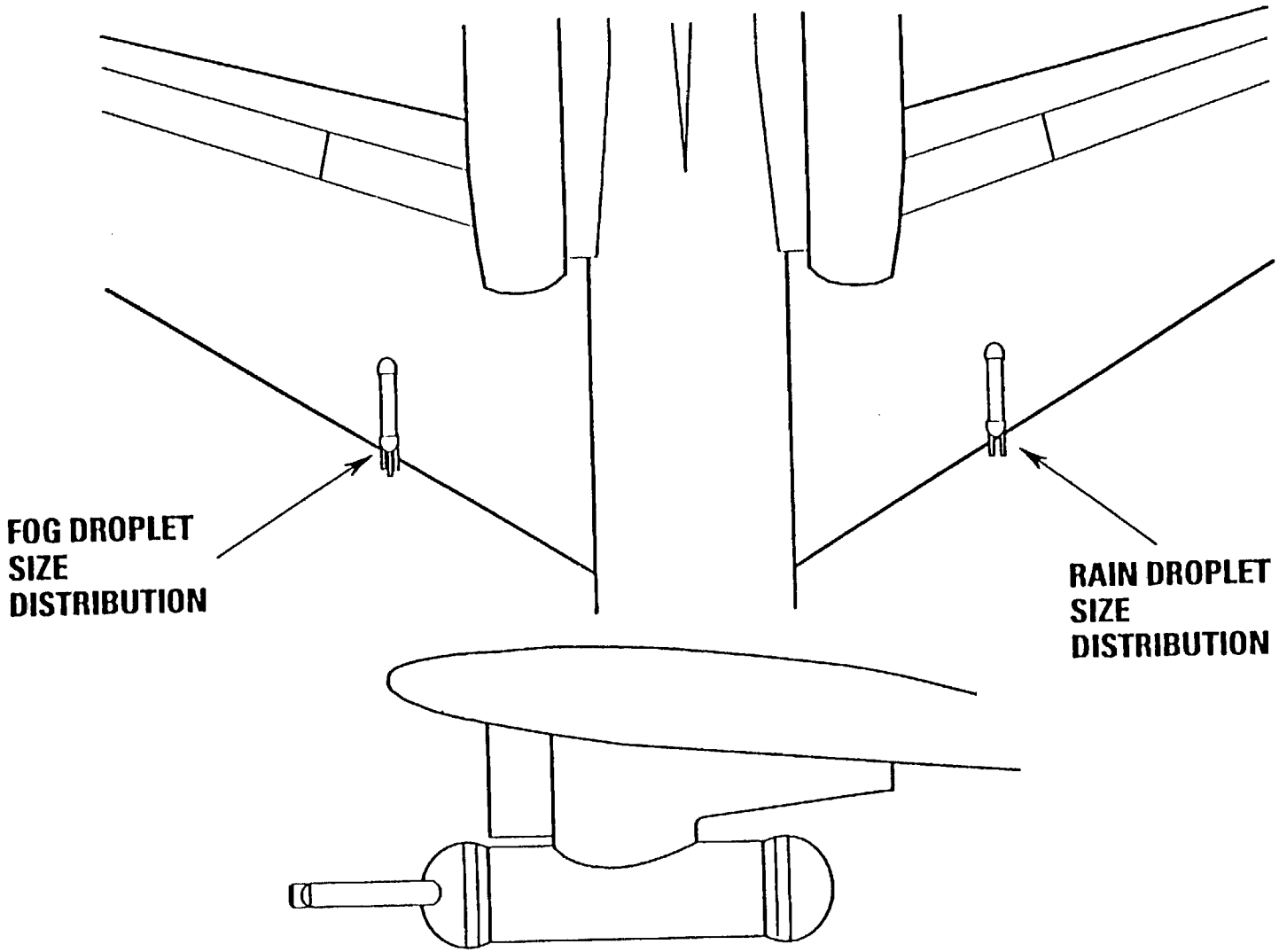



Fig. 1. Aircraft mounting of particle size instrumentation.

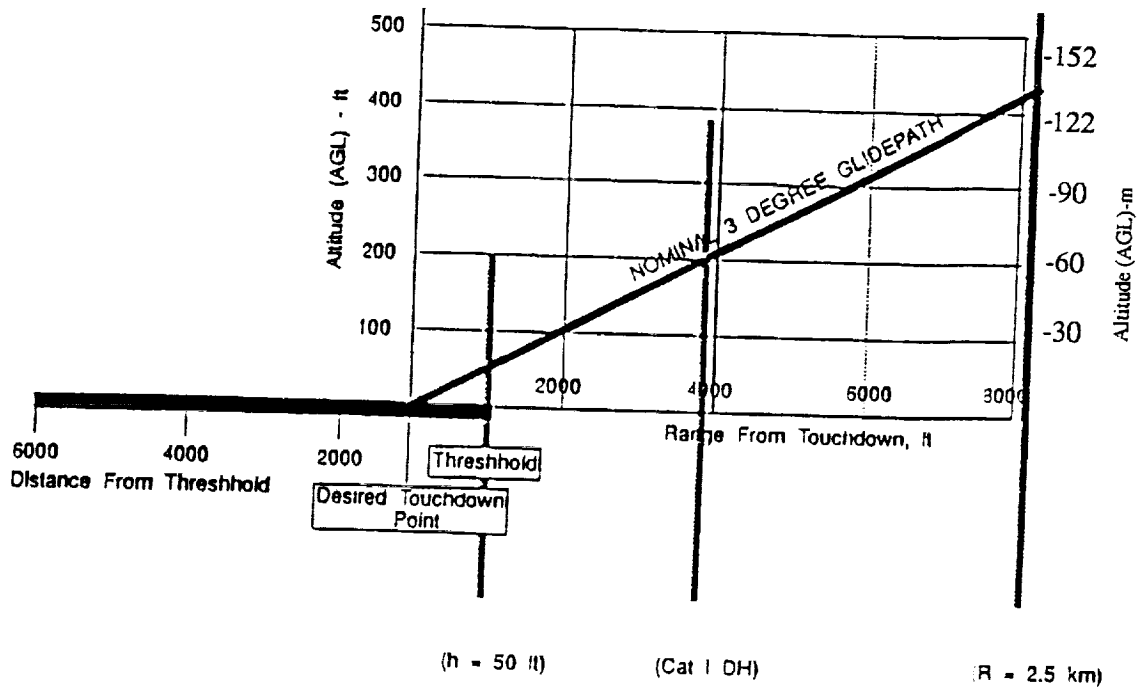



Fig. 2. Synthetic Vision experimental aircraft instrument landing system (ILS) approach distances.

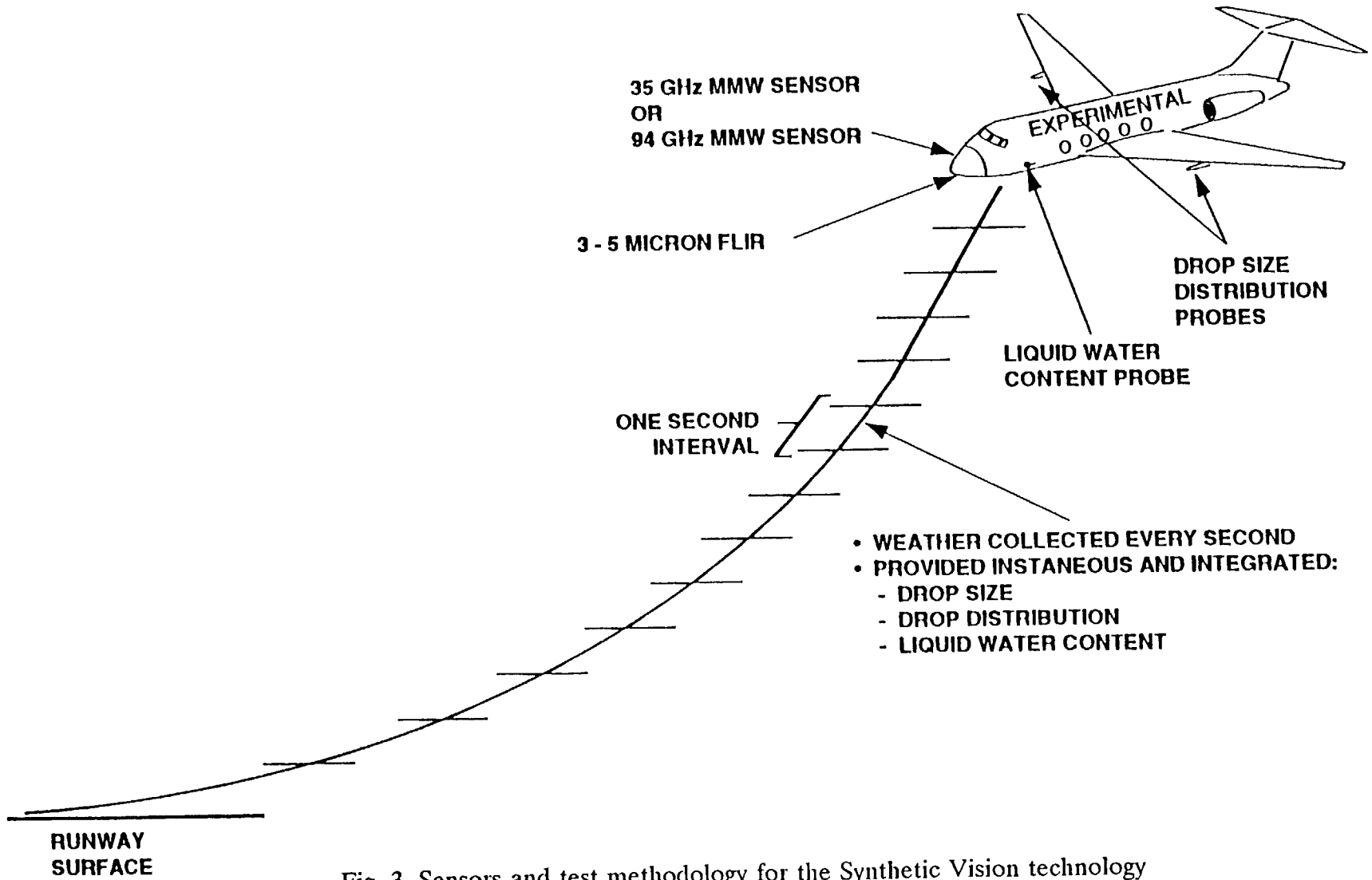



Fig. 3. Sensors and test methodology for the Synthetic Vision technology demonstration project.

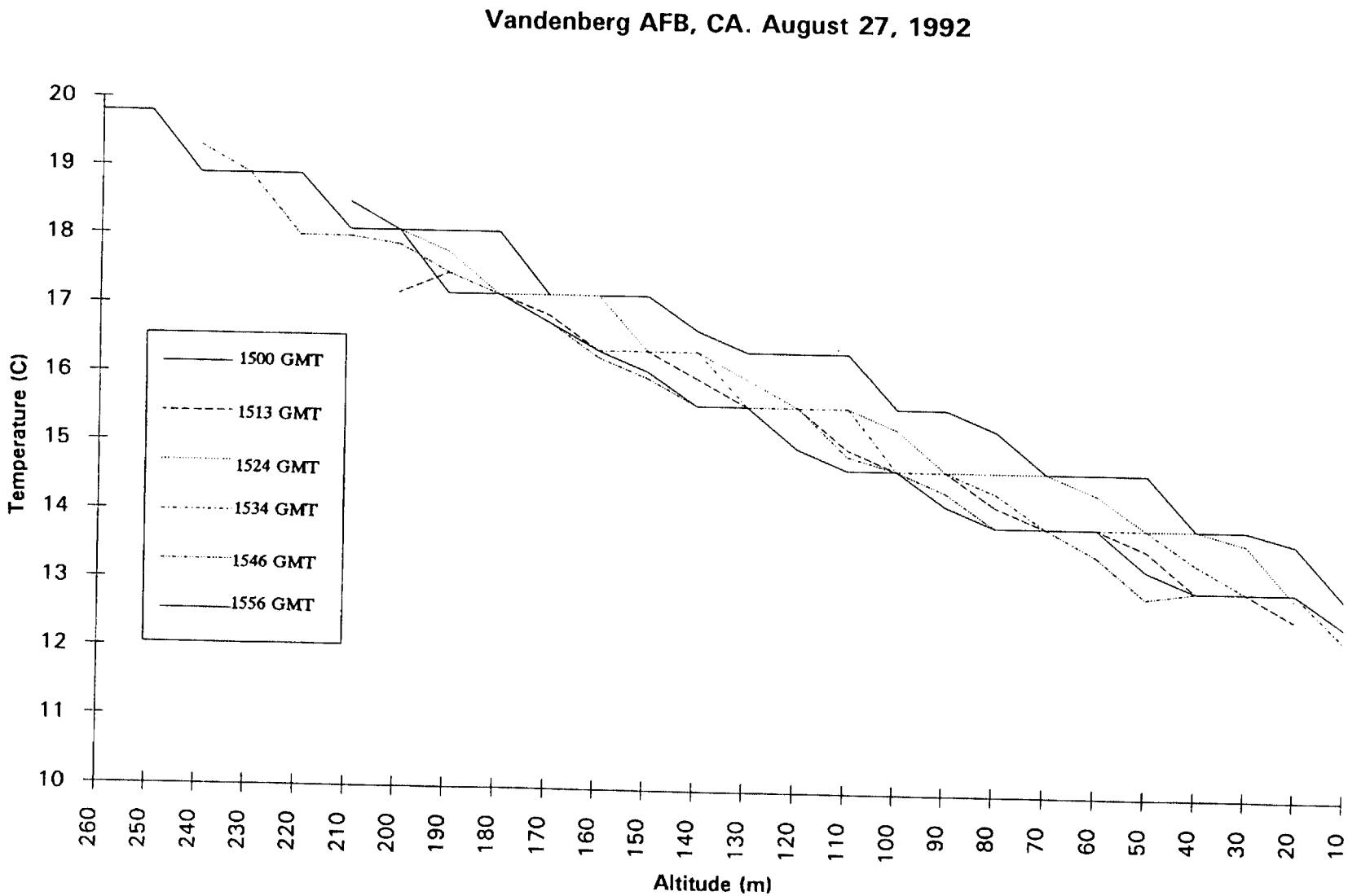



Fig. 4. Temperature vs. altitude for all aircraft approaches to Vandenberg AFB, CA.

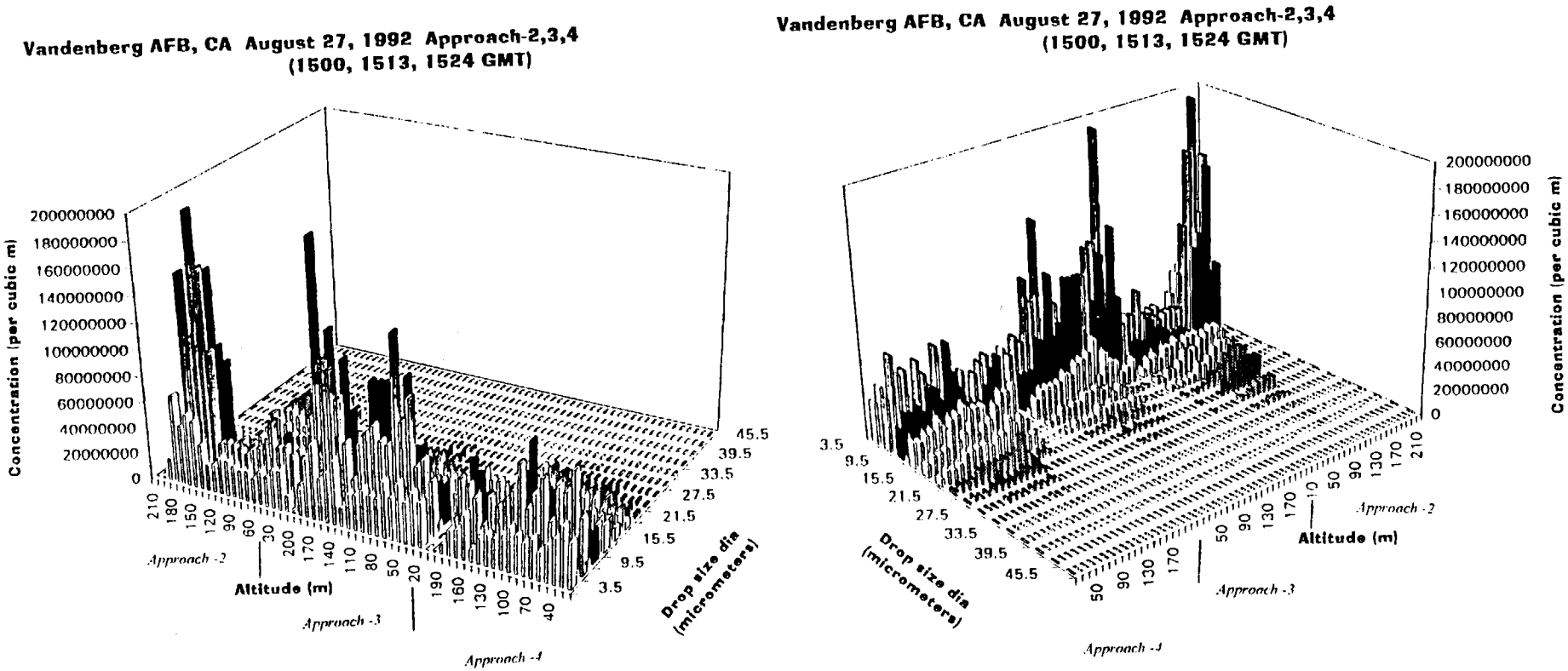



Fig. 5a. Drop size distribution for Vandenberg AFB, CA.

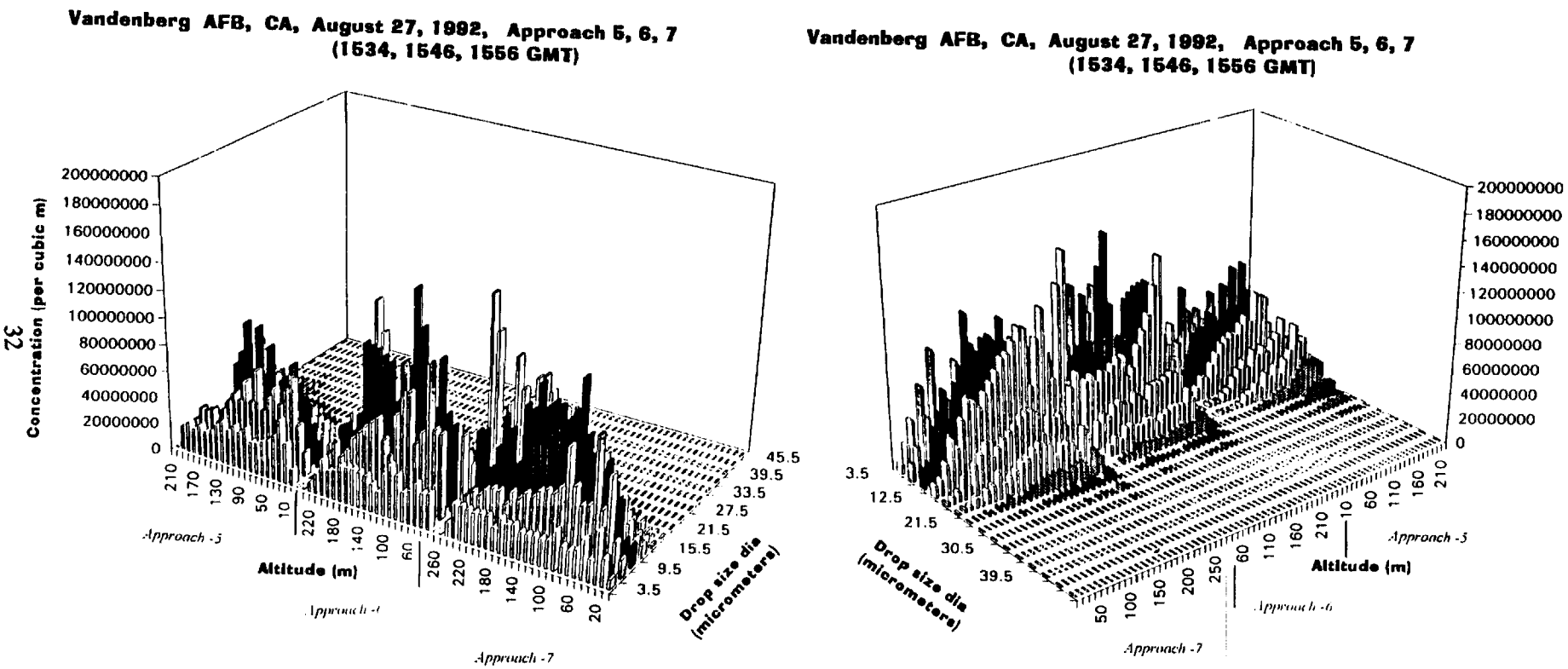



Fig. 5b. Drop size distribution for Vandenberg AFB, CA.

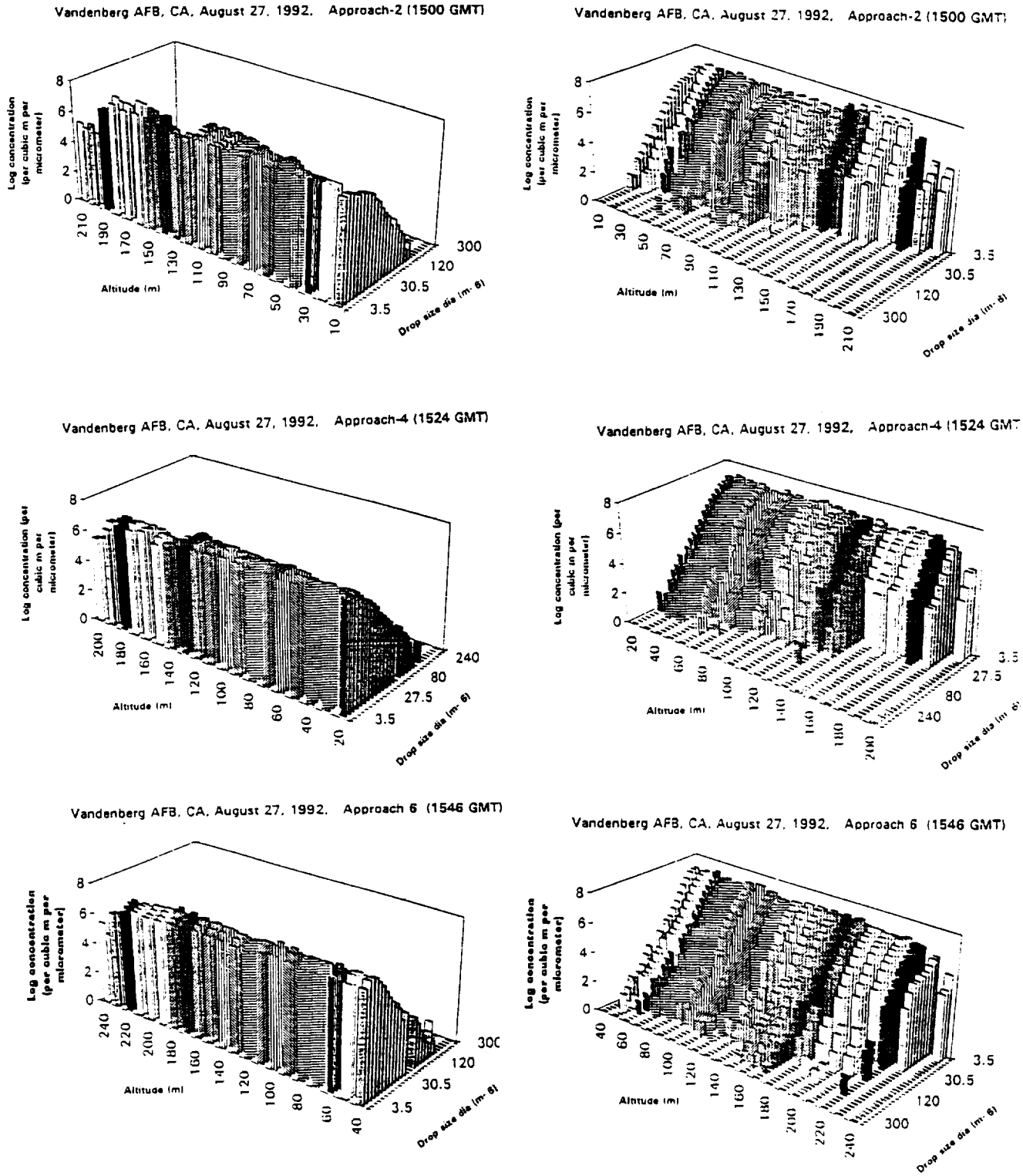
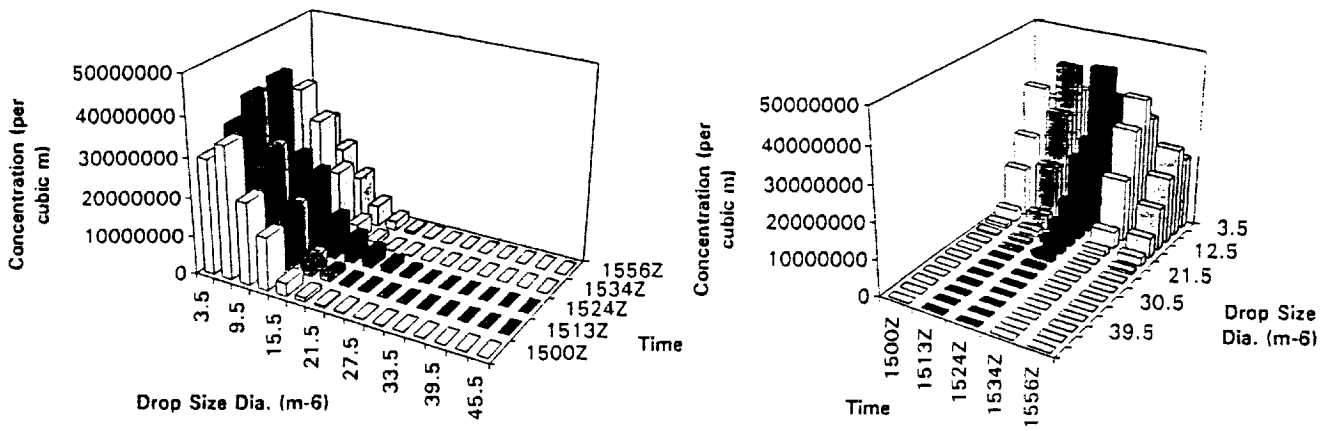



Fig. 6. Drop size distribution logarithm plots for Vandenberg AFB, CA.

Vandenberg AFB, CA Drop Size Distribution for 20 meter Altitude
for Sequential Approaches




Vandenberg AFB, CA Drop Size Distribution for 80 meter Altitude
for Sequential Approaches

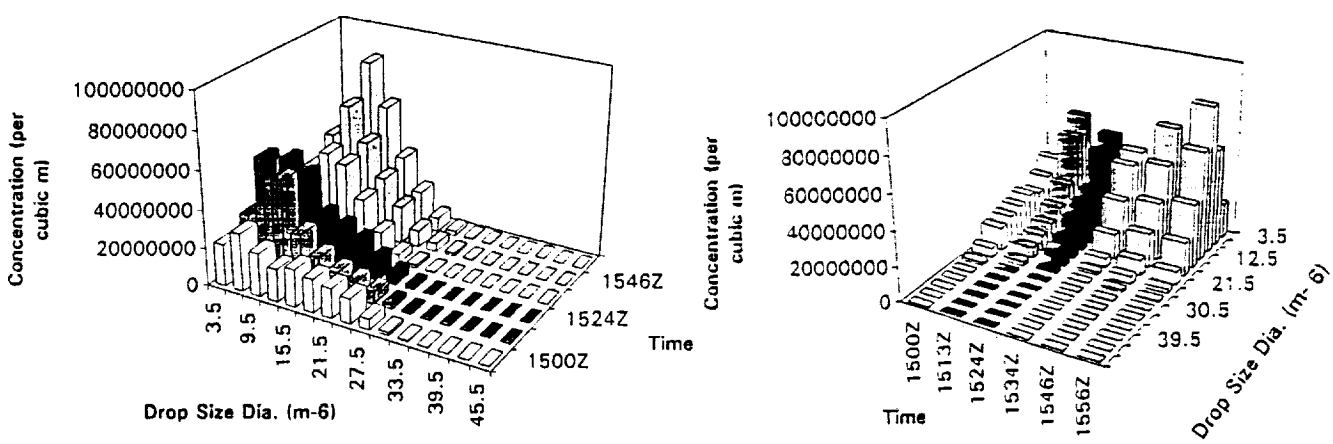
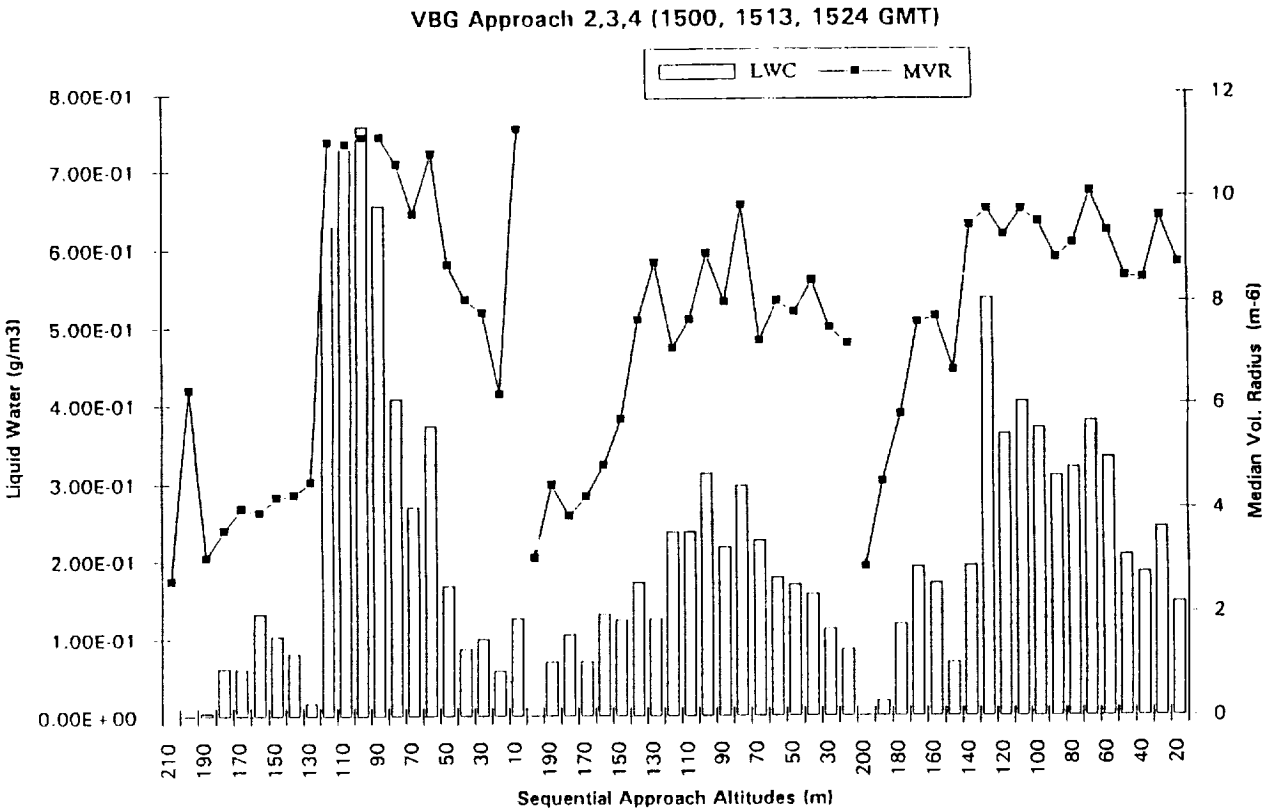



Fig. 7. Drop size distribution for 20 and 80 m altitude for Vandenberg AFB, CA.



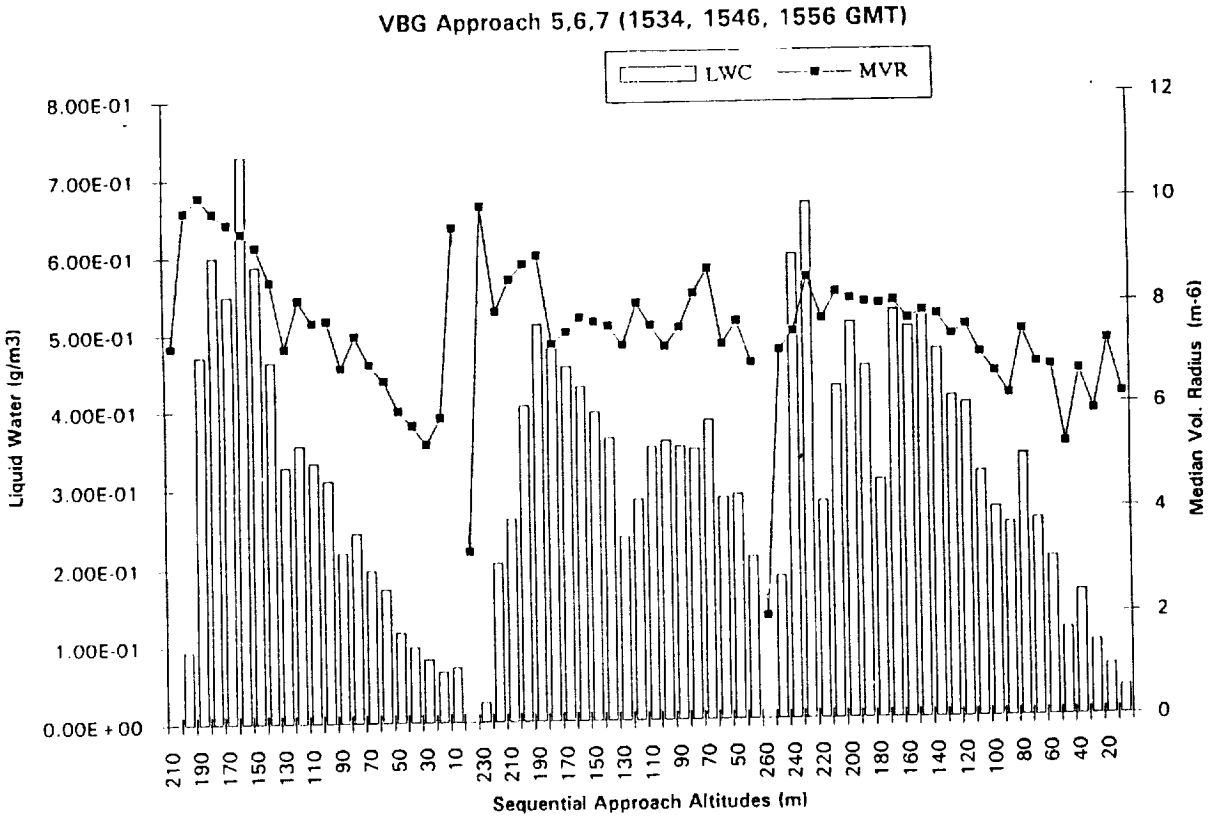
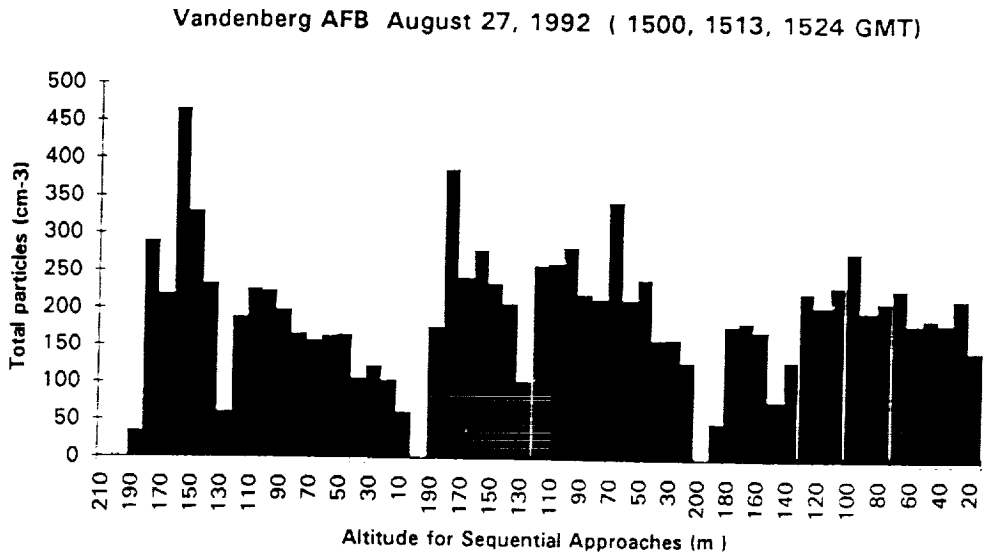




Fig. 8. Liquid water content and medium volume radius for Vandenberg AFB, CA.



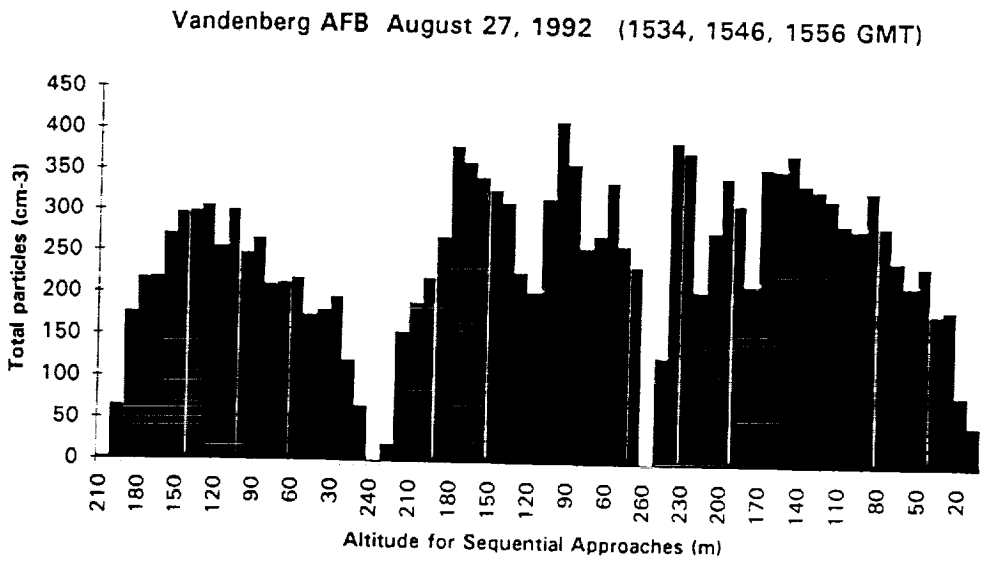




Fig. 9. Total number of particles for Vandenberg AFB, CA.

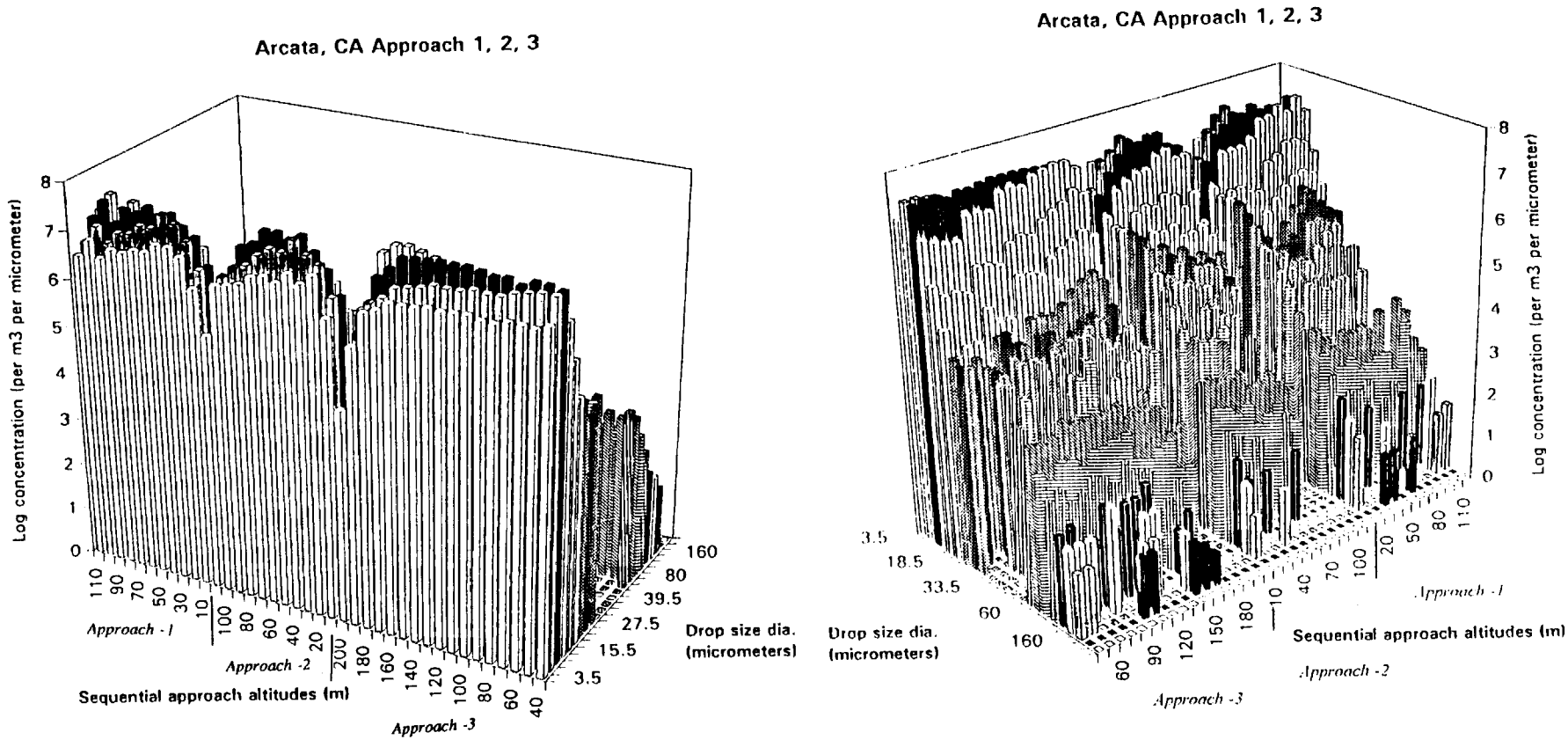



Fig. 10a. Drop size distribution for Arcata, CA logarithm plots.

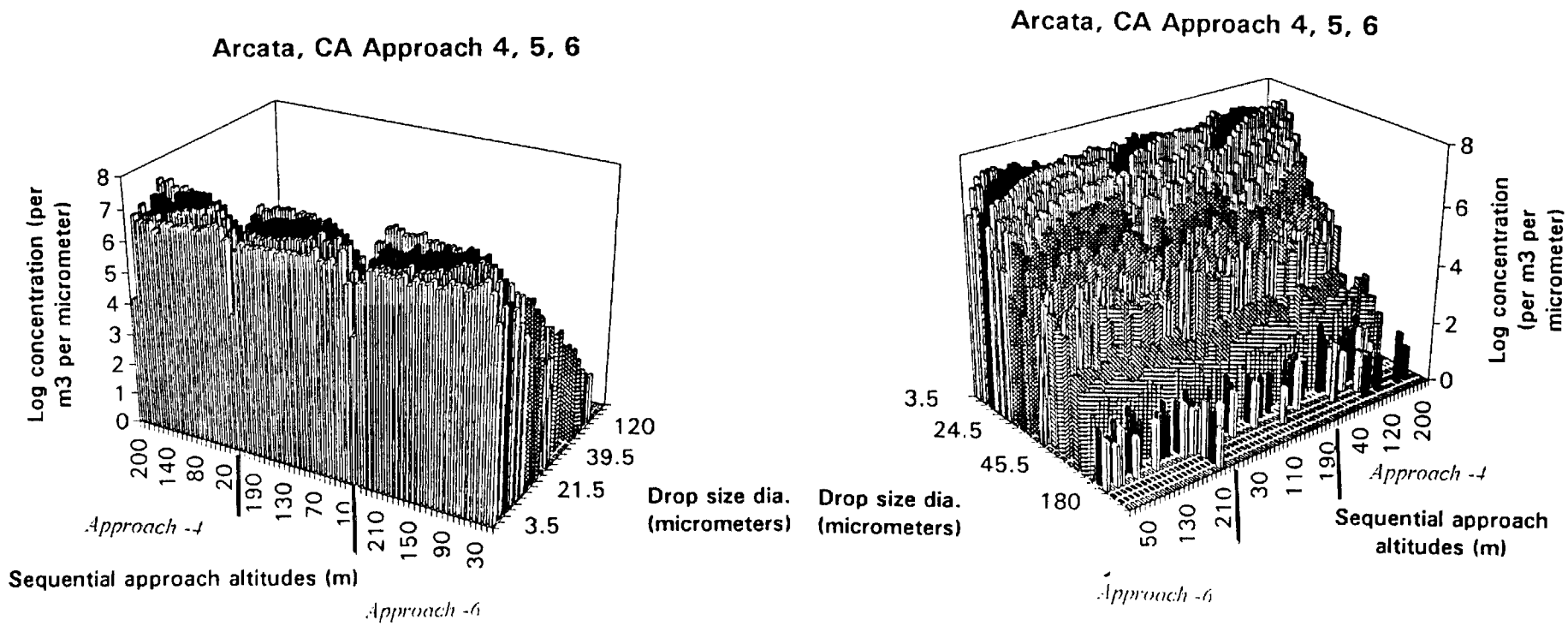



Fig. 10b. Drop size distribution for Arcata, CA logarithm plots.

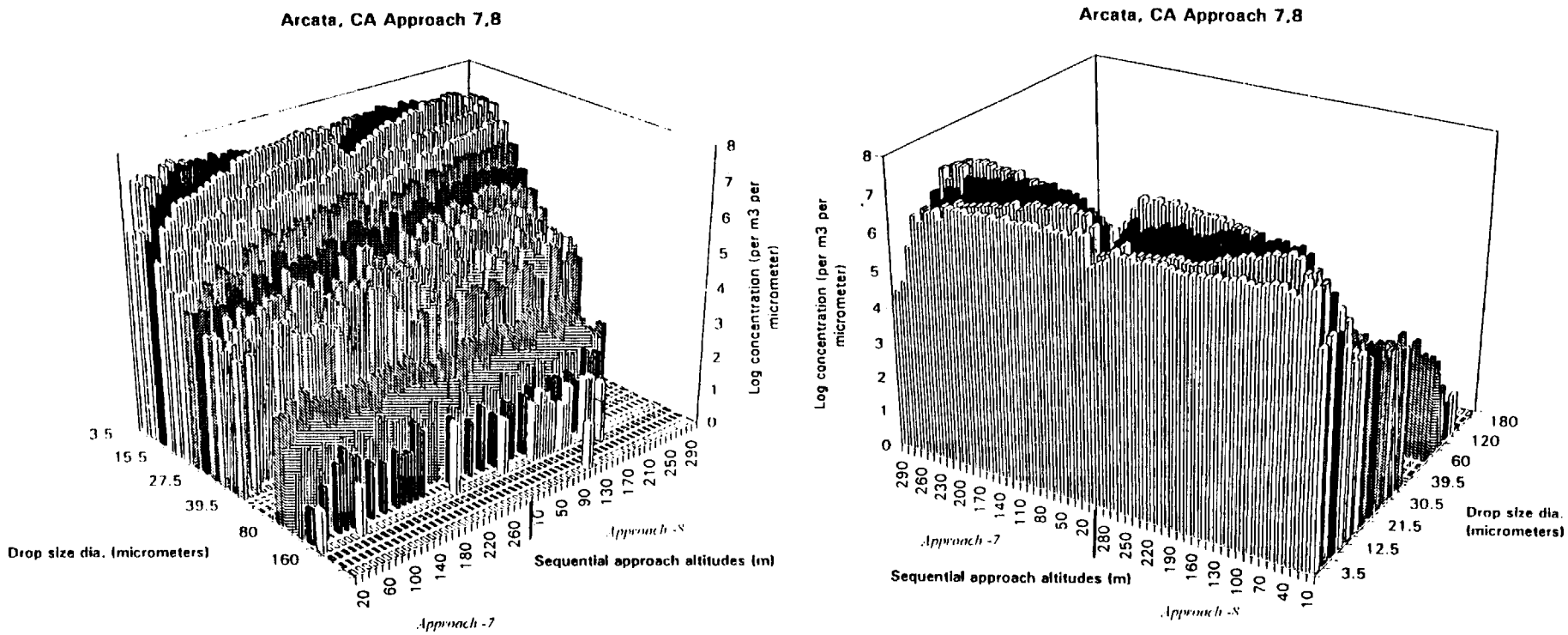



Fig. 10c. Drop size distribution for Arcata, CA logarithm plots.

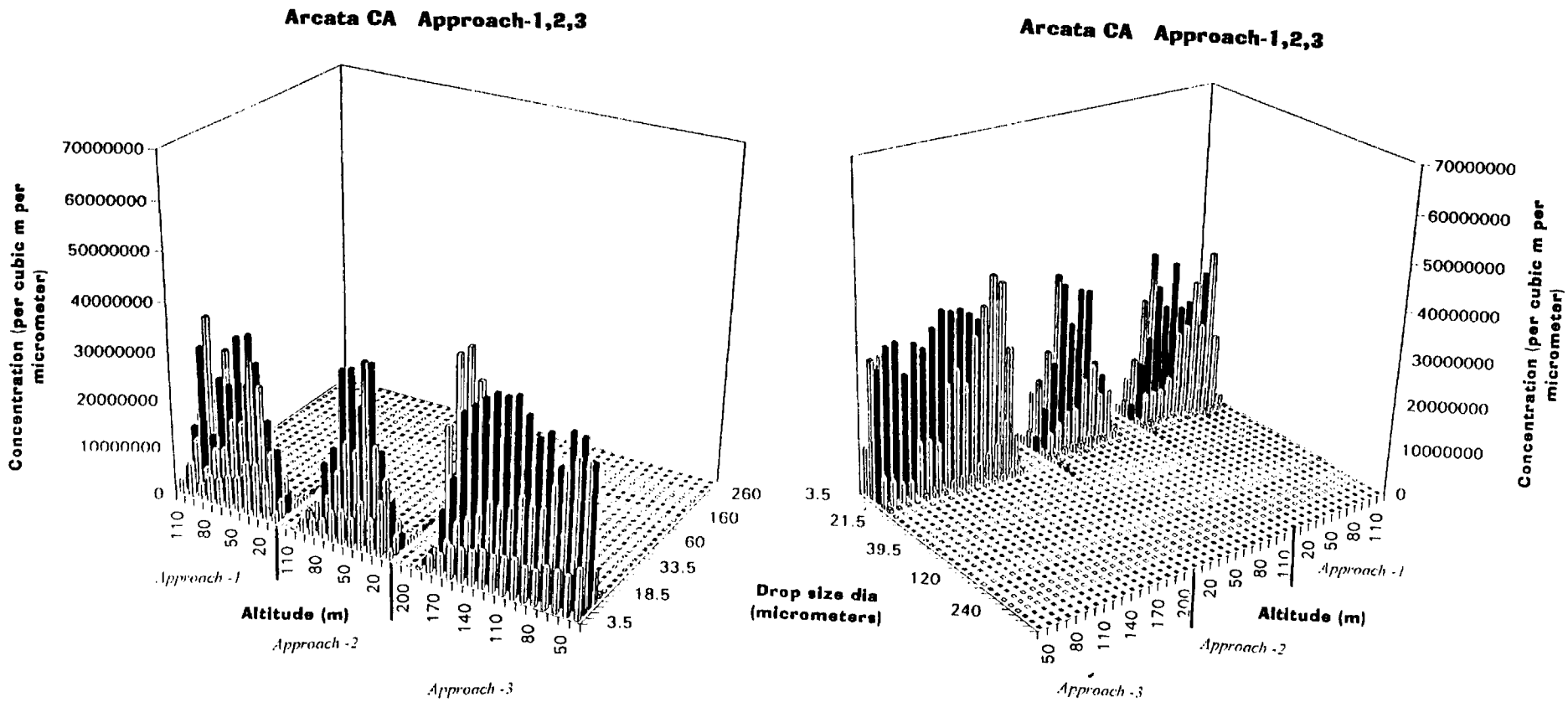



Fig. 11a. Drop size distribution for Arcata, CA.

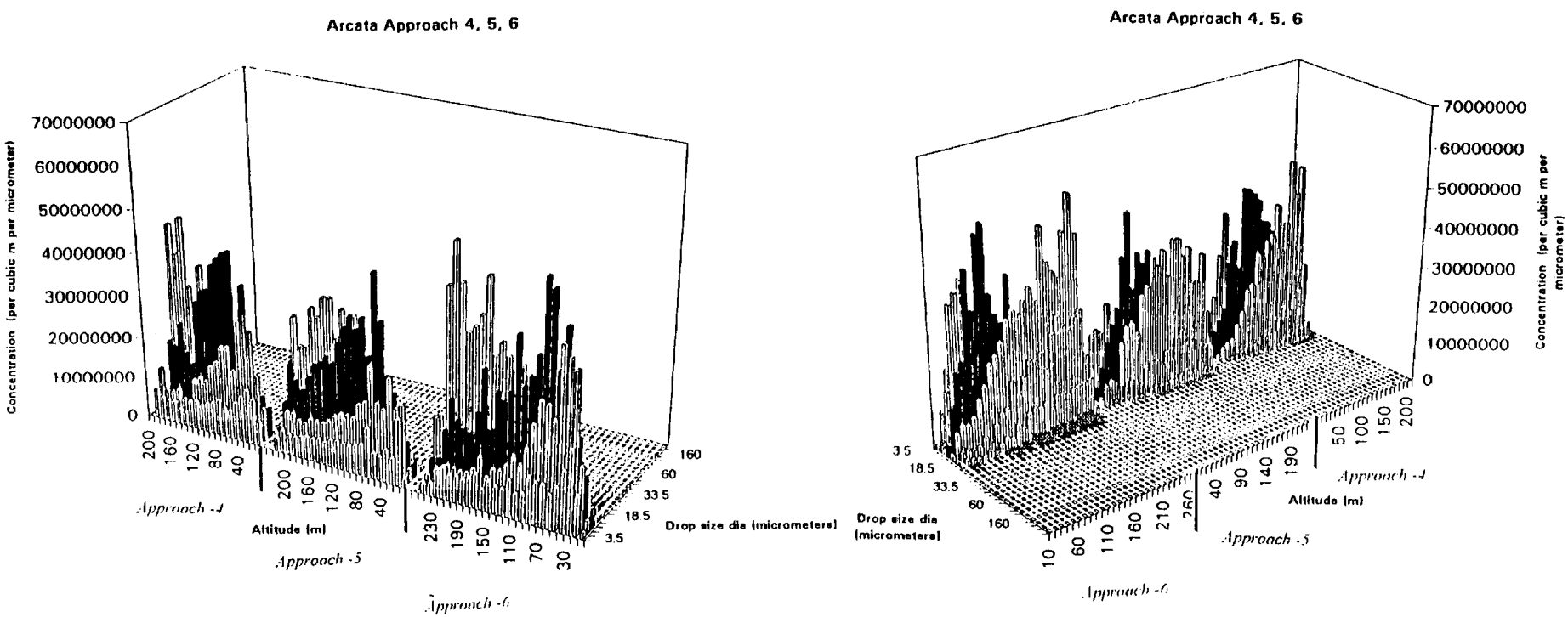



Fig. 11b. Drop size distribution for Arcata, CA.

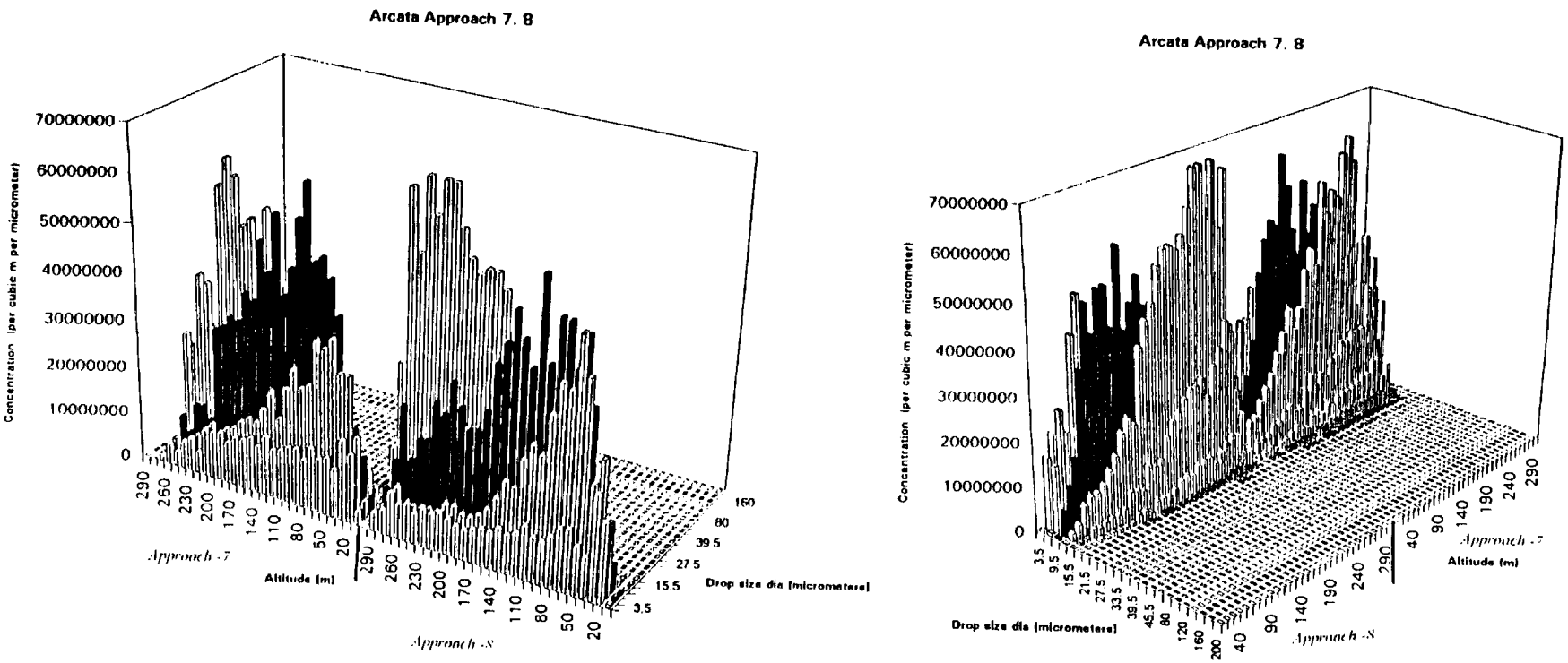



Fig. 11c. Drop size distribution for Arcata, CA.

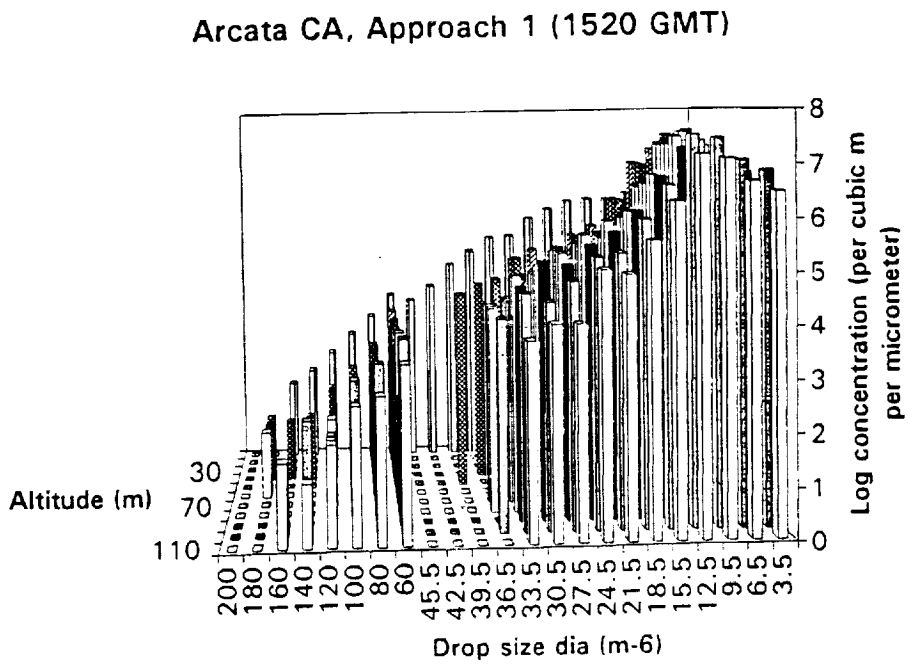
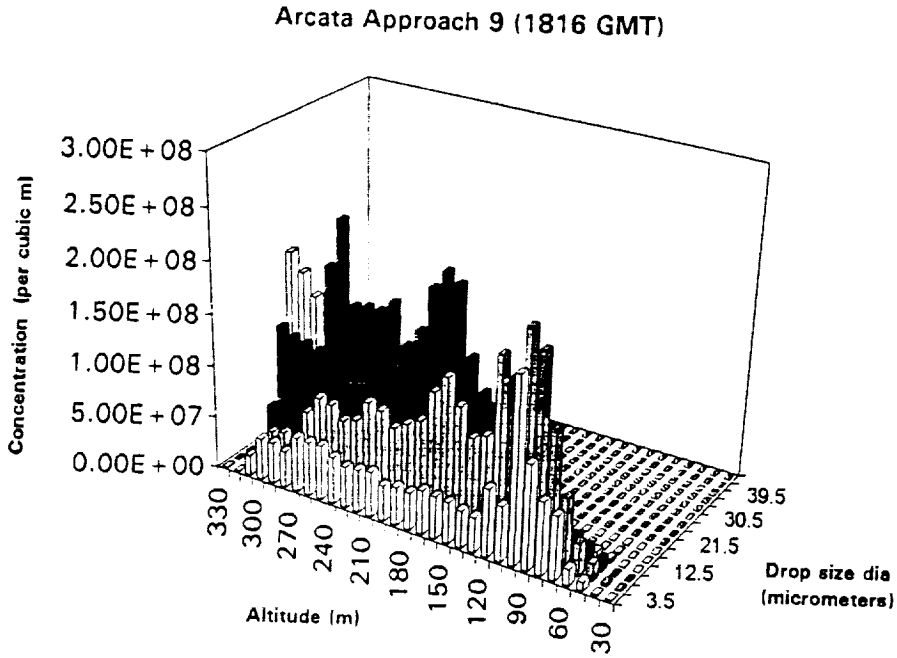



Fig. 12. Drop size distribution for approach 1, Arcata, CA.



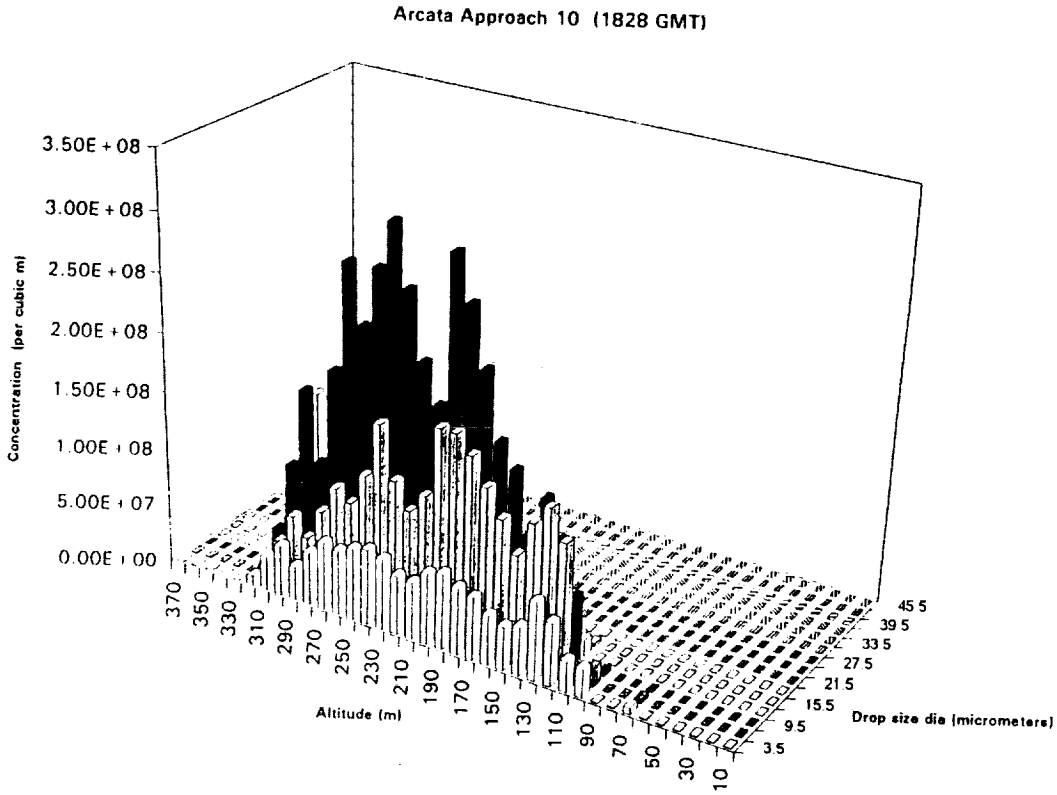




Fig. 13. Drop size distribution for approach 9, 10, Arcata, CA.

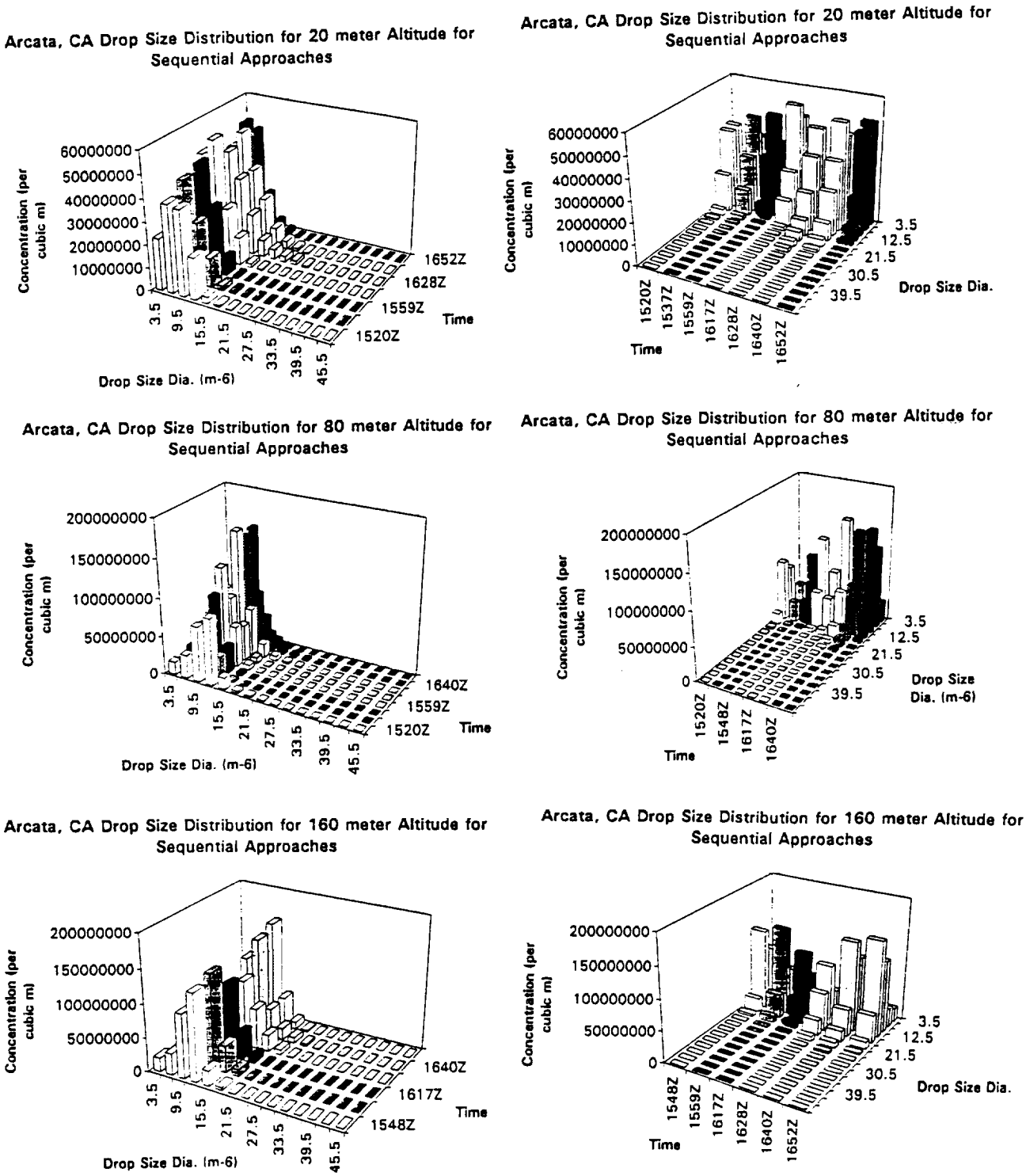



Fig. 14. Drop size distribution for 20, 80, 160 m altitude for Arcata, CA.

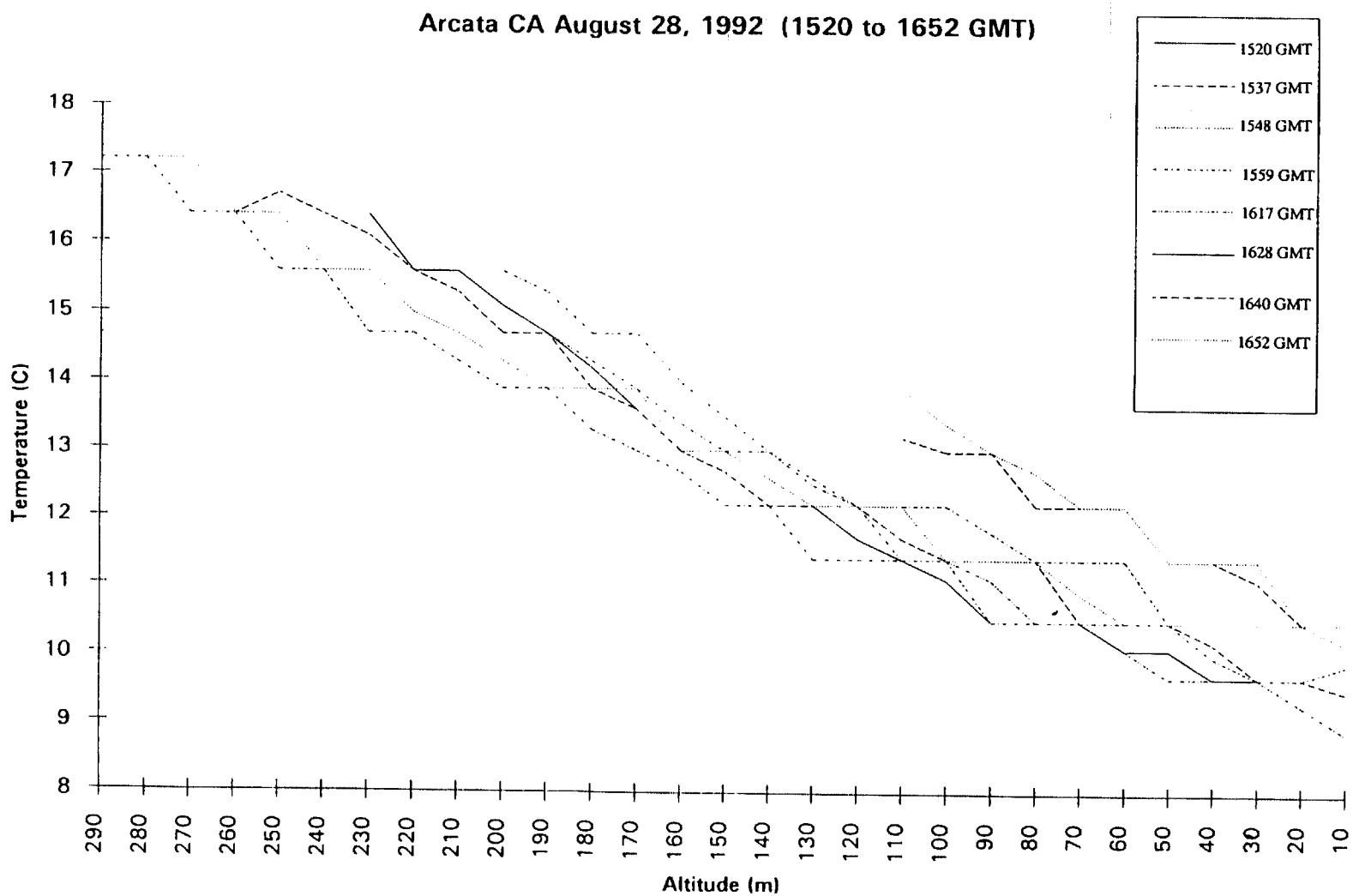



Fig. 15. Temperature vs. altitude for all aircraft approaches to Arcata, CA.

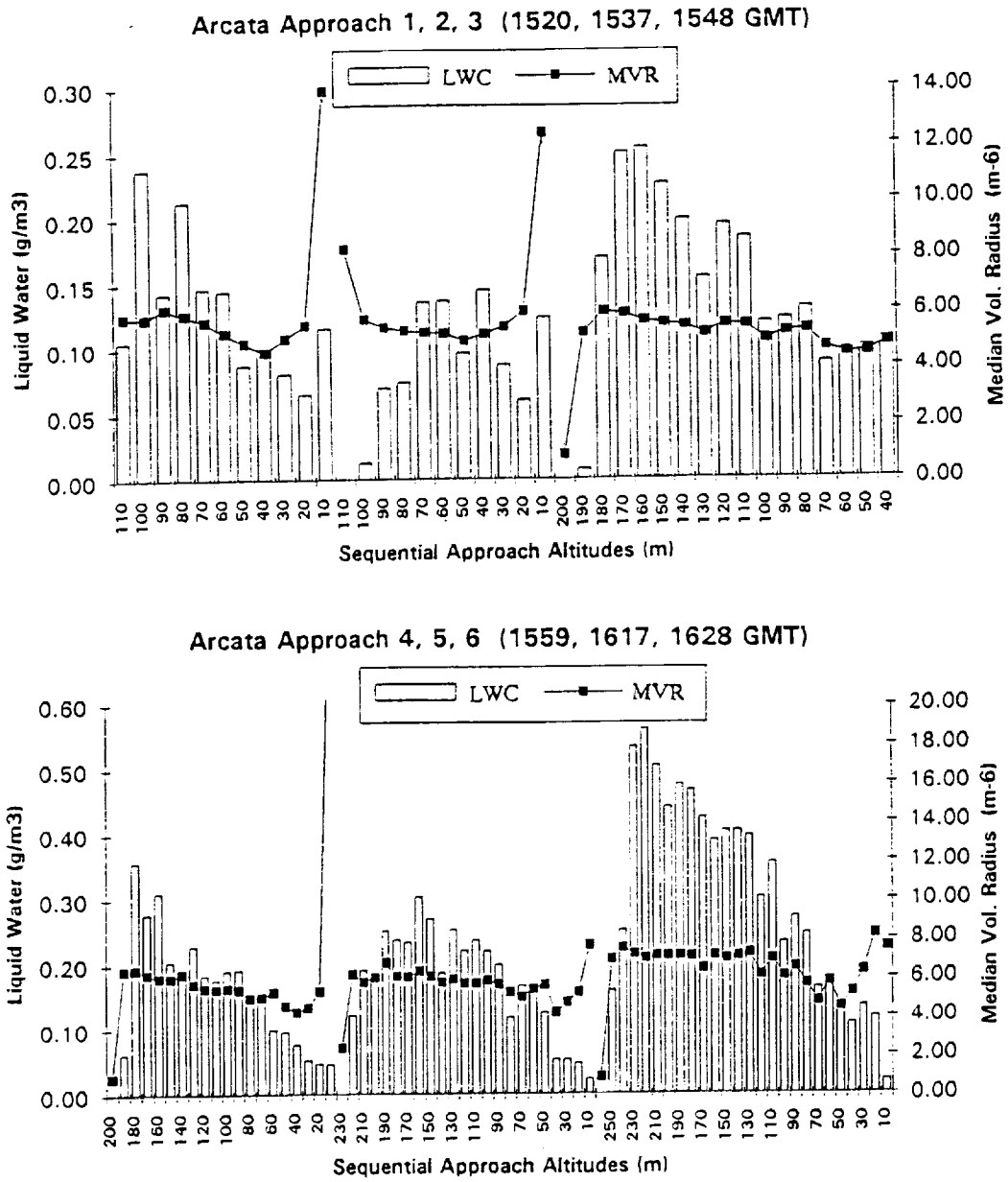
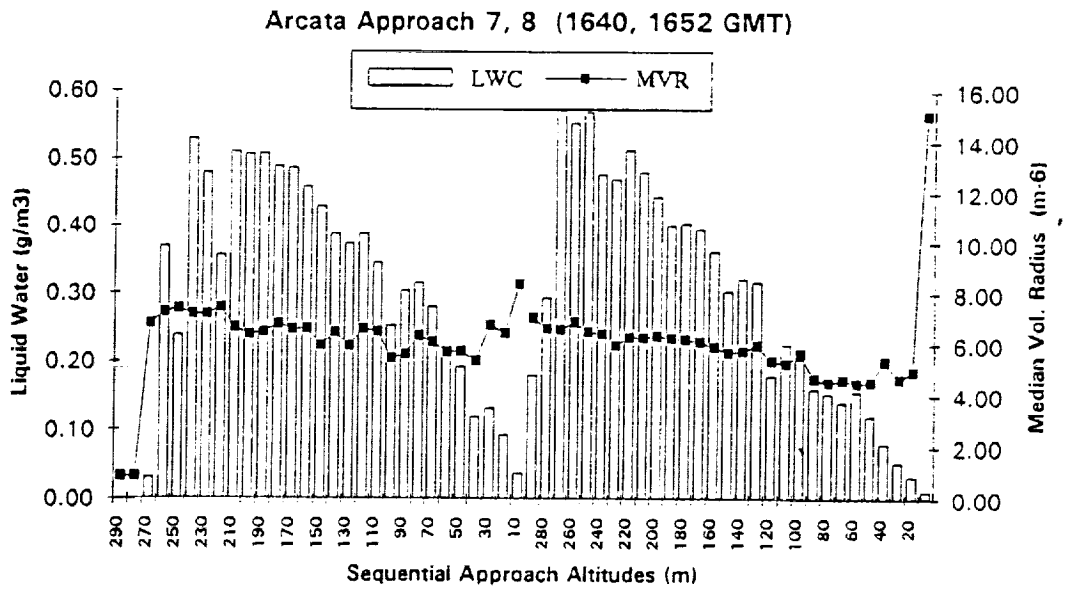



Fig. 16a. Liquid water content and median volume radius for Arcata, CA.



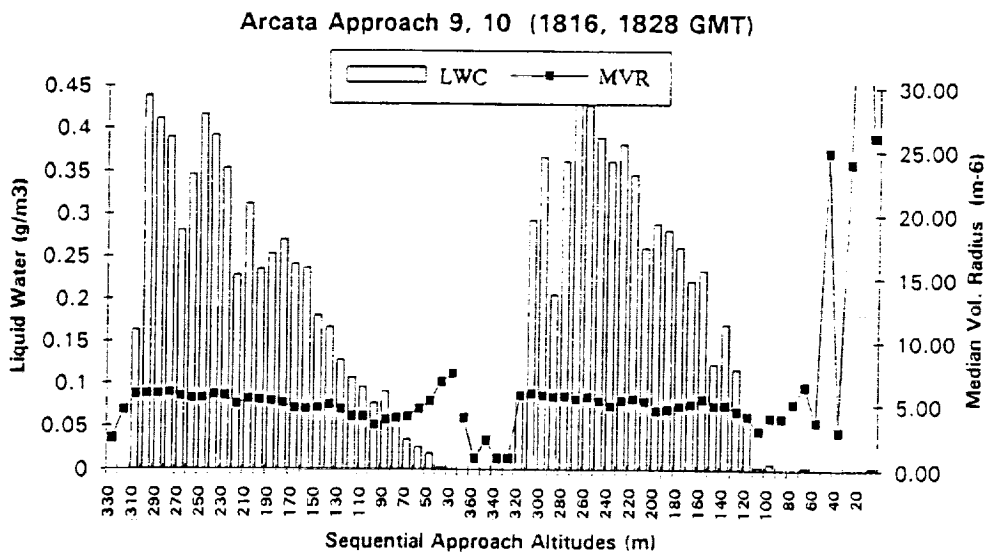
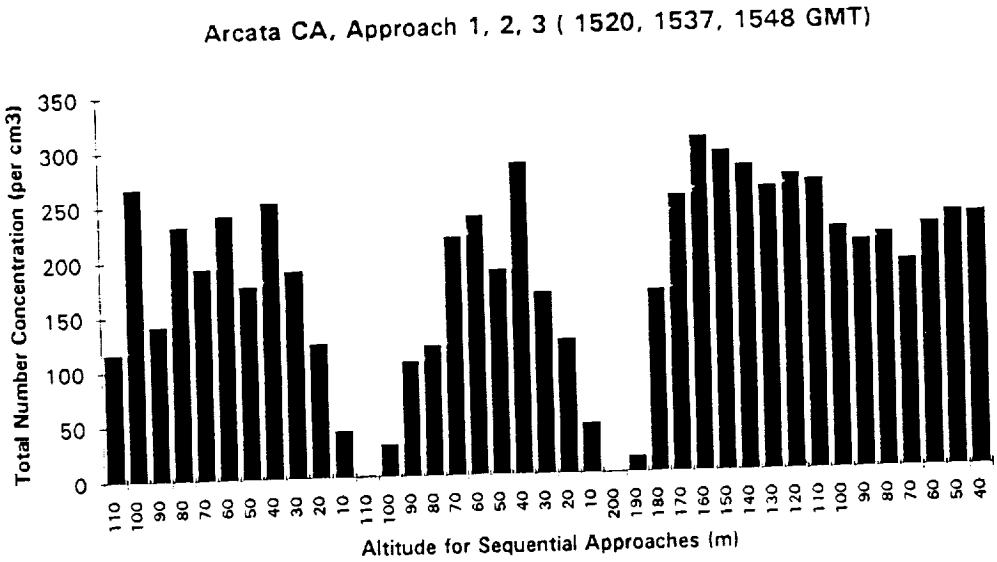




Fig. 16b. Liquid water content and median volume radius for Arcata, CA.



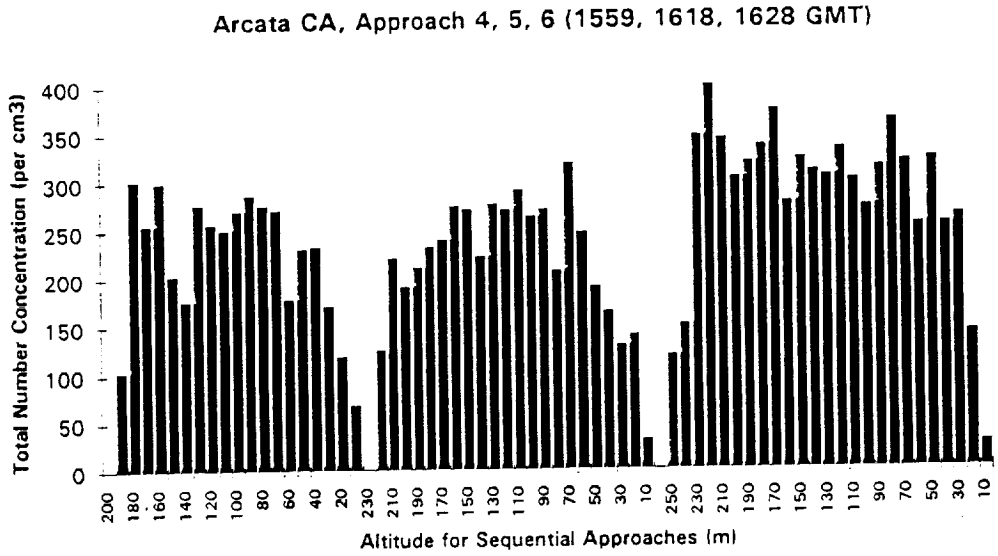
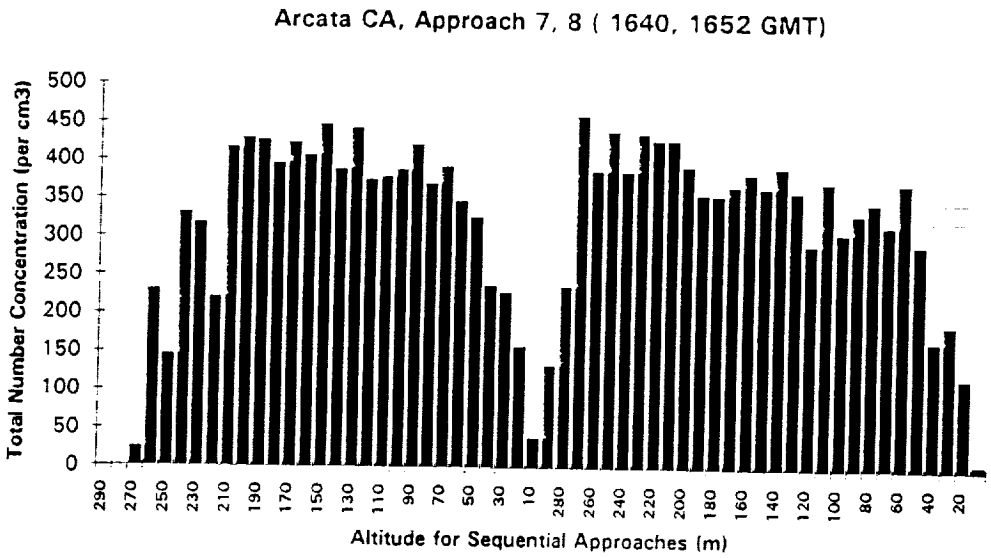




Fig. 17a. Total number of particles for Arcata, CA.



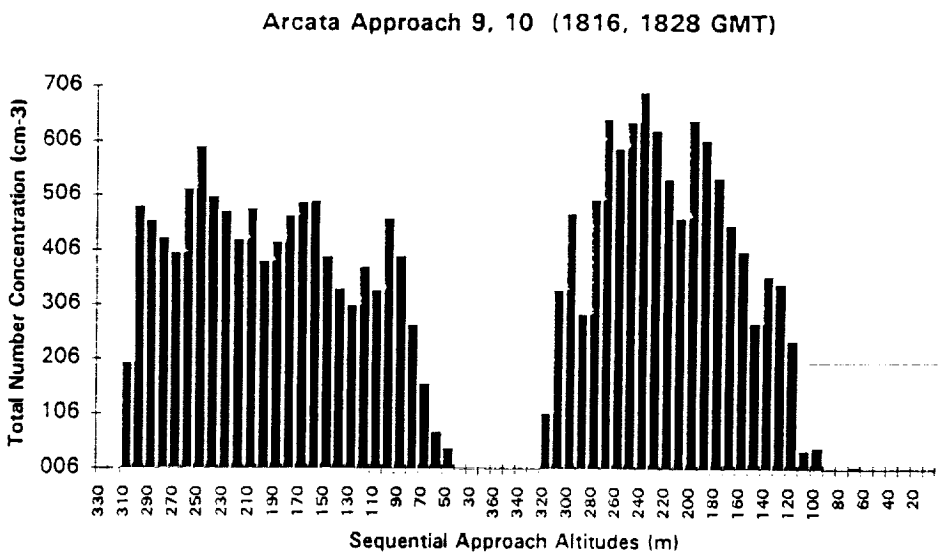




Fig. 17b. Total number of particles for Arcata, CA.

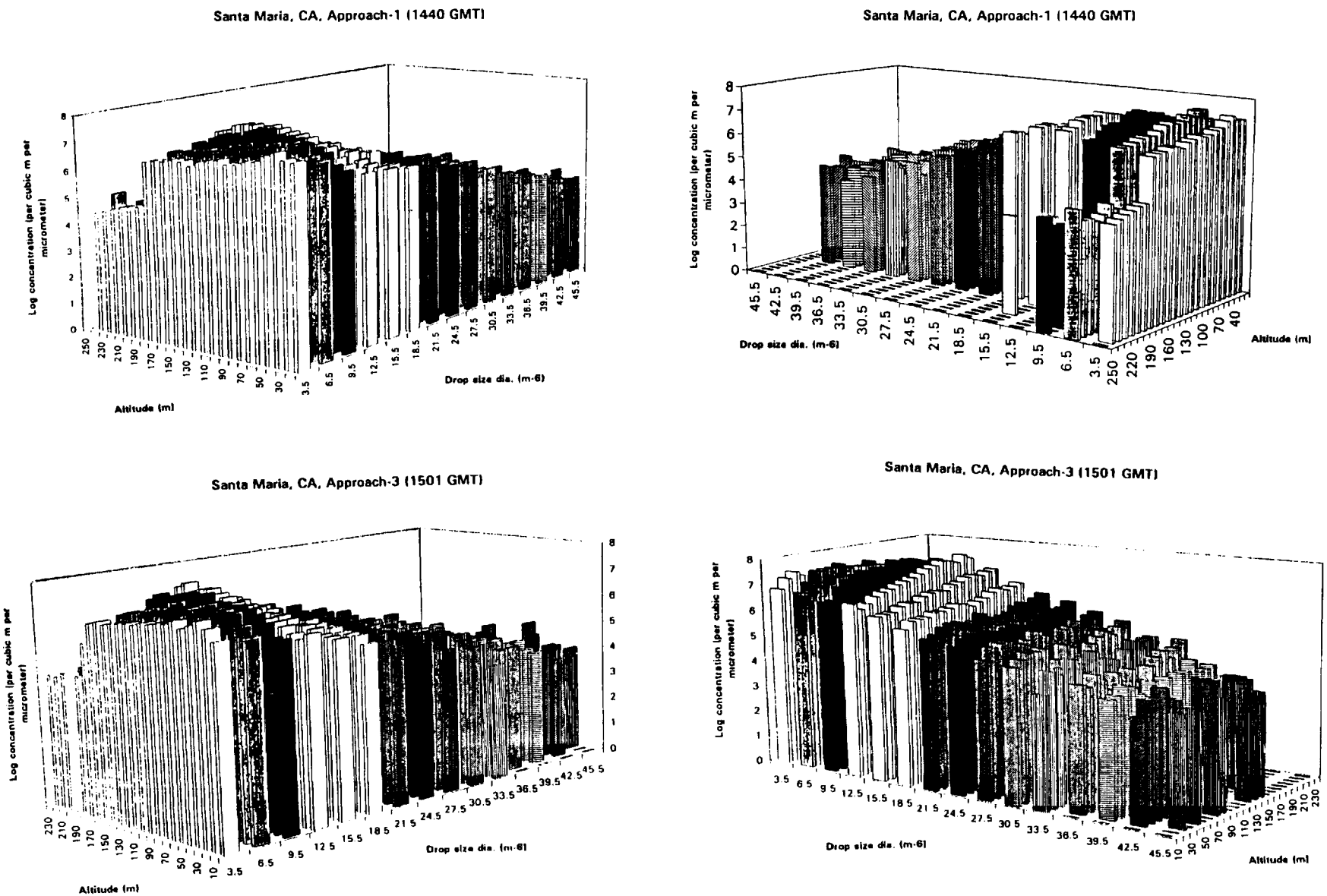



Fig. 18. Drop size distribution for Santa Maria, CA., logarithm plot.

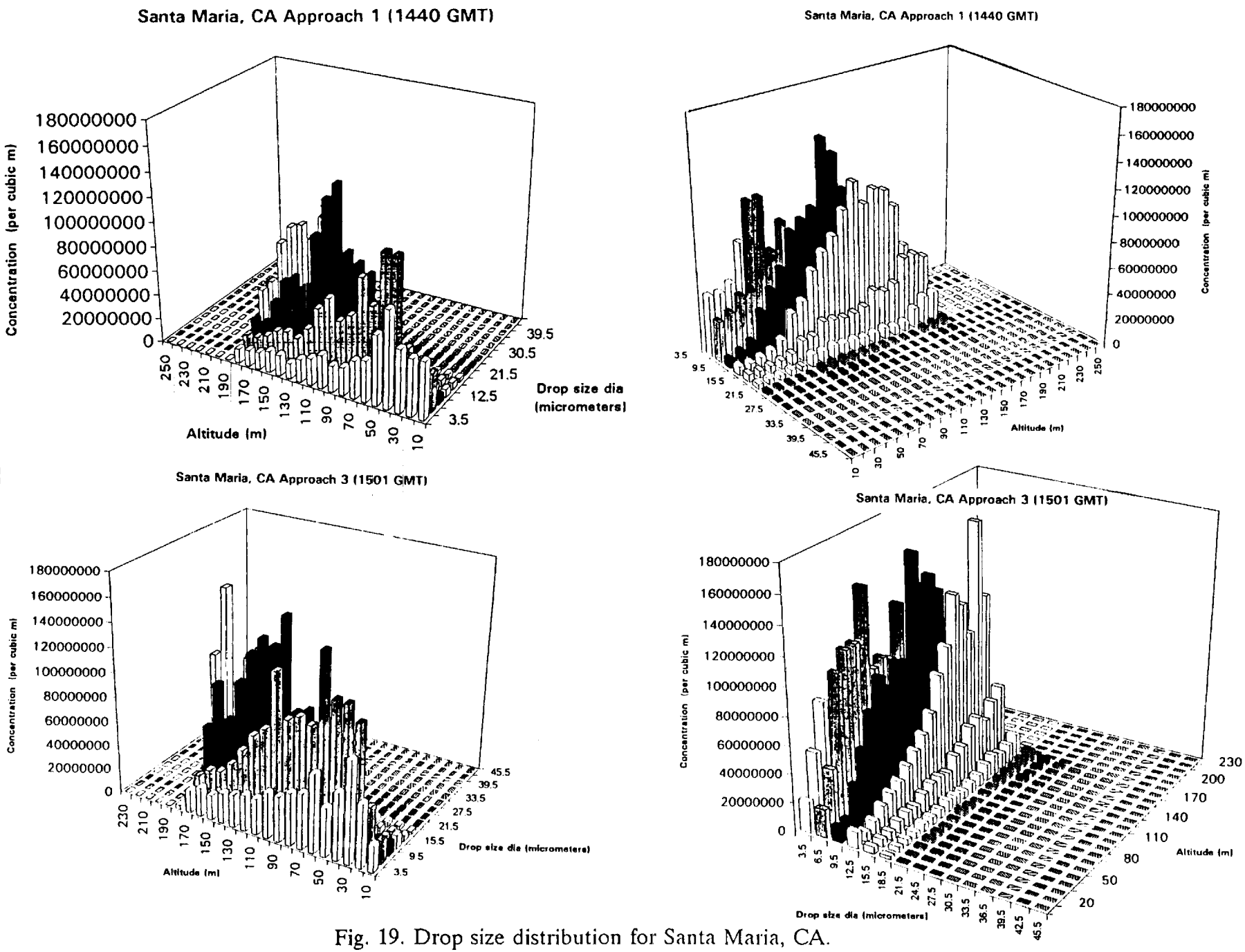



Fig. 19. Drop size distribution for Santa Maria, CA.

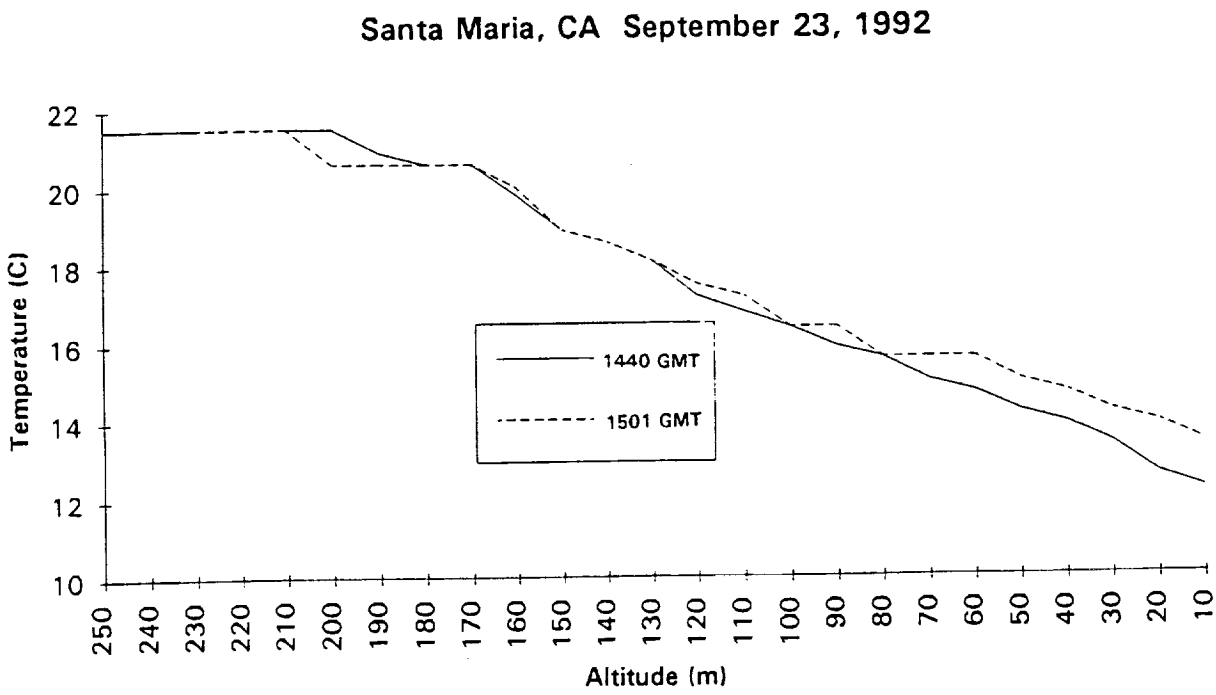



Fig. 20. Temperature vs. altitude for Santa Maria, CA.

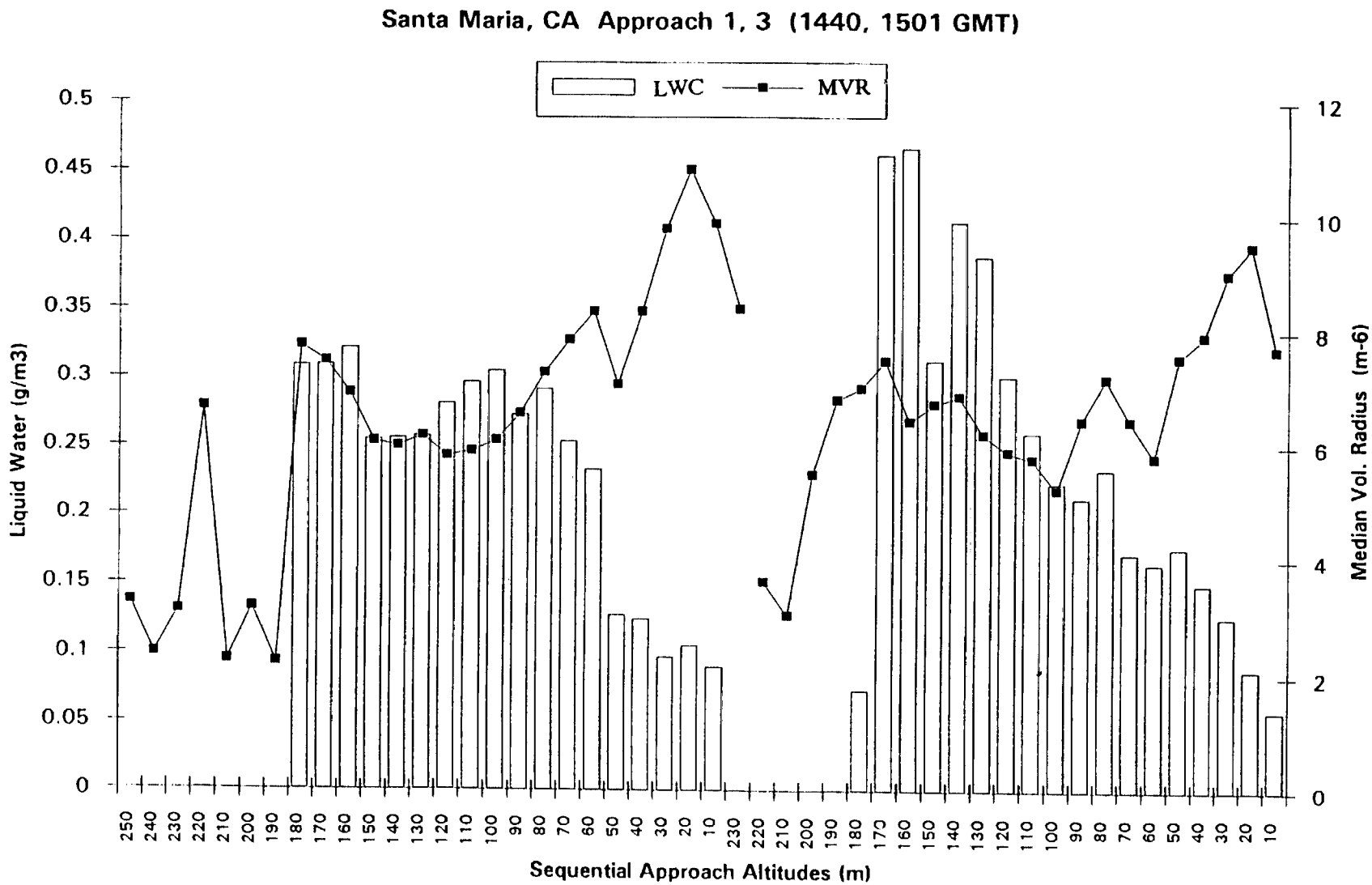



Fig. 21. Liquid water content and median volume radius for Santa Maria, CA.

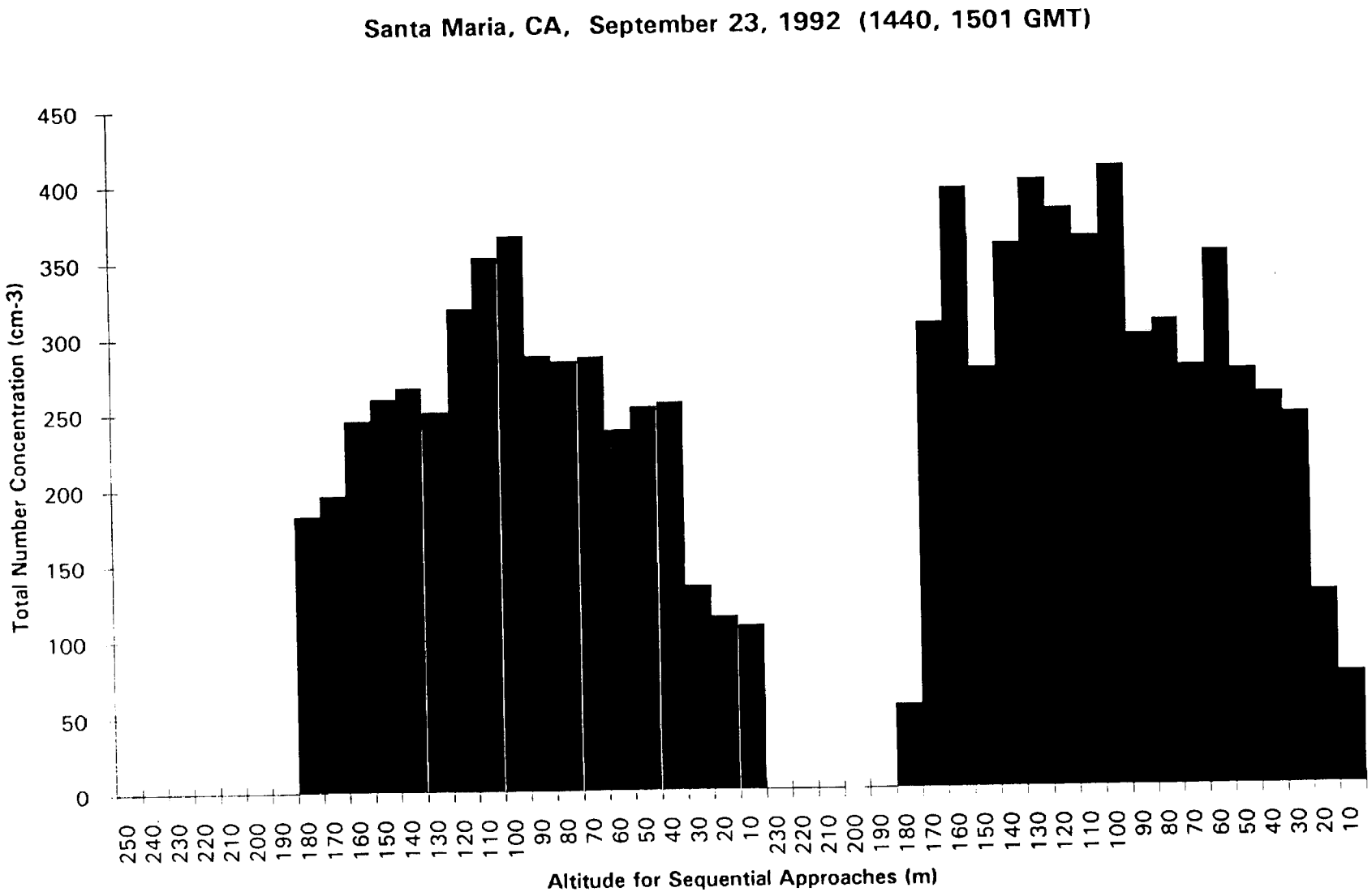



Fig. 22. Total number of particles for Santa Maria, CA.

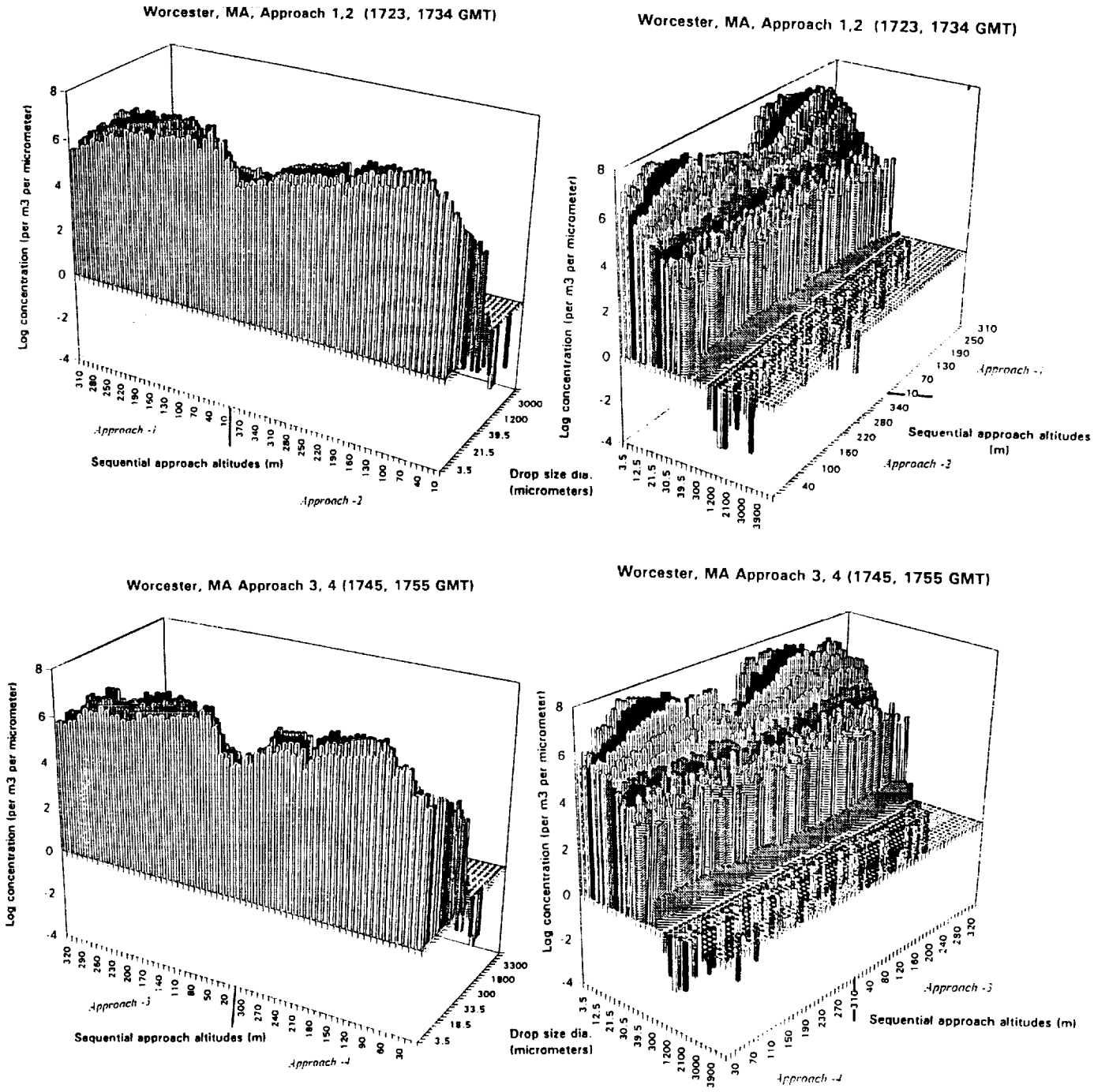



Fig. 23. Drop size distribution for Worcester, MA, logarithm plot.

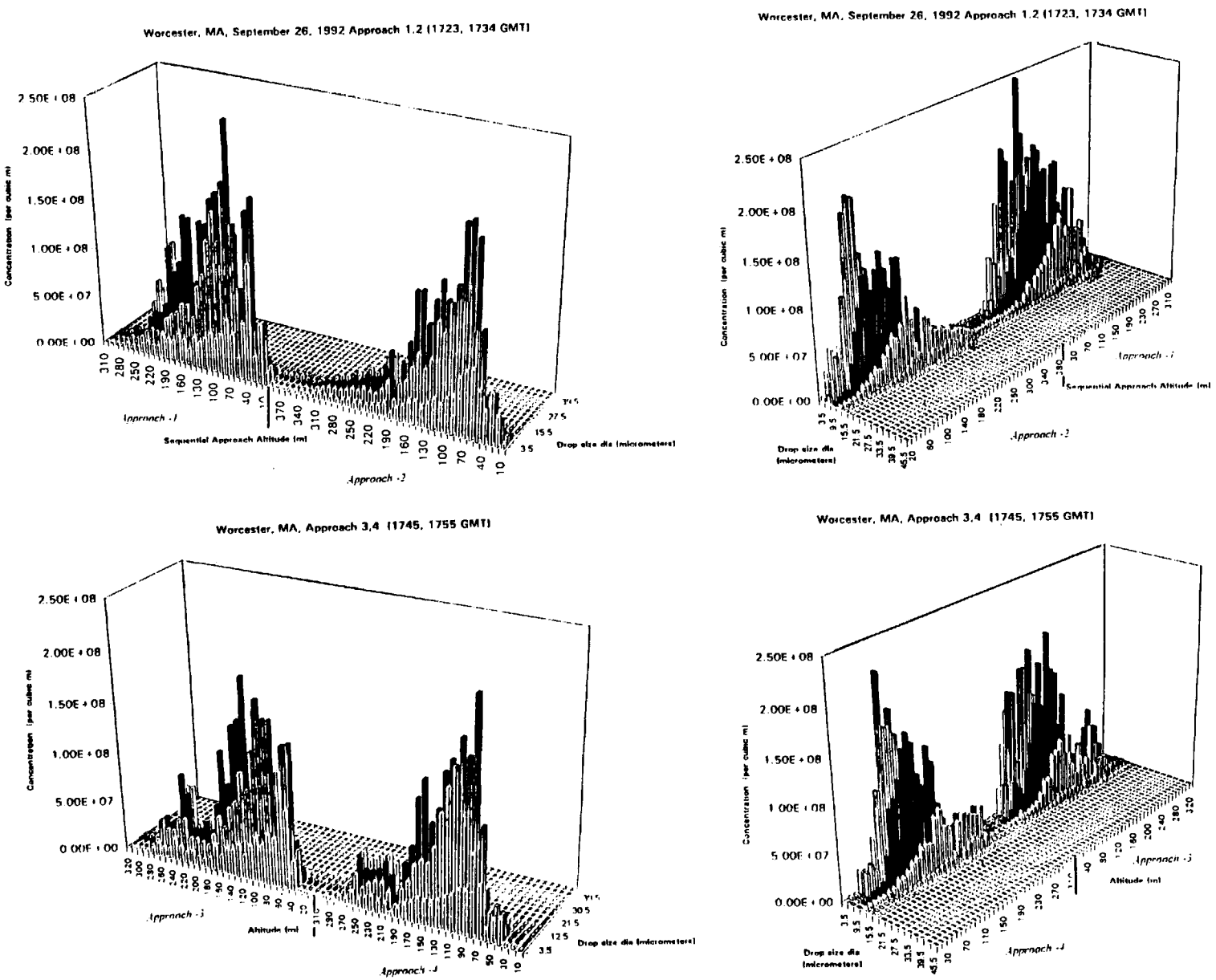



Fig. 24. Drop size distribution for Worcester, MA.

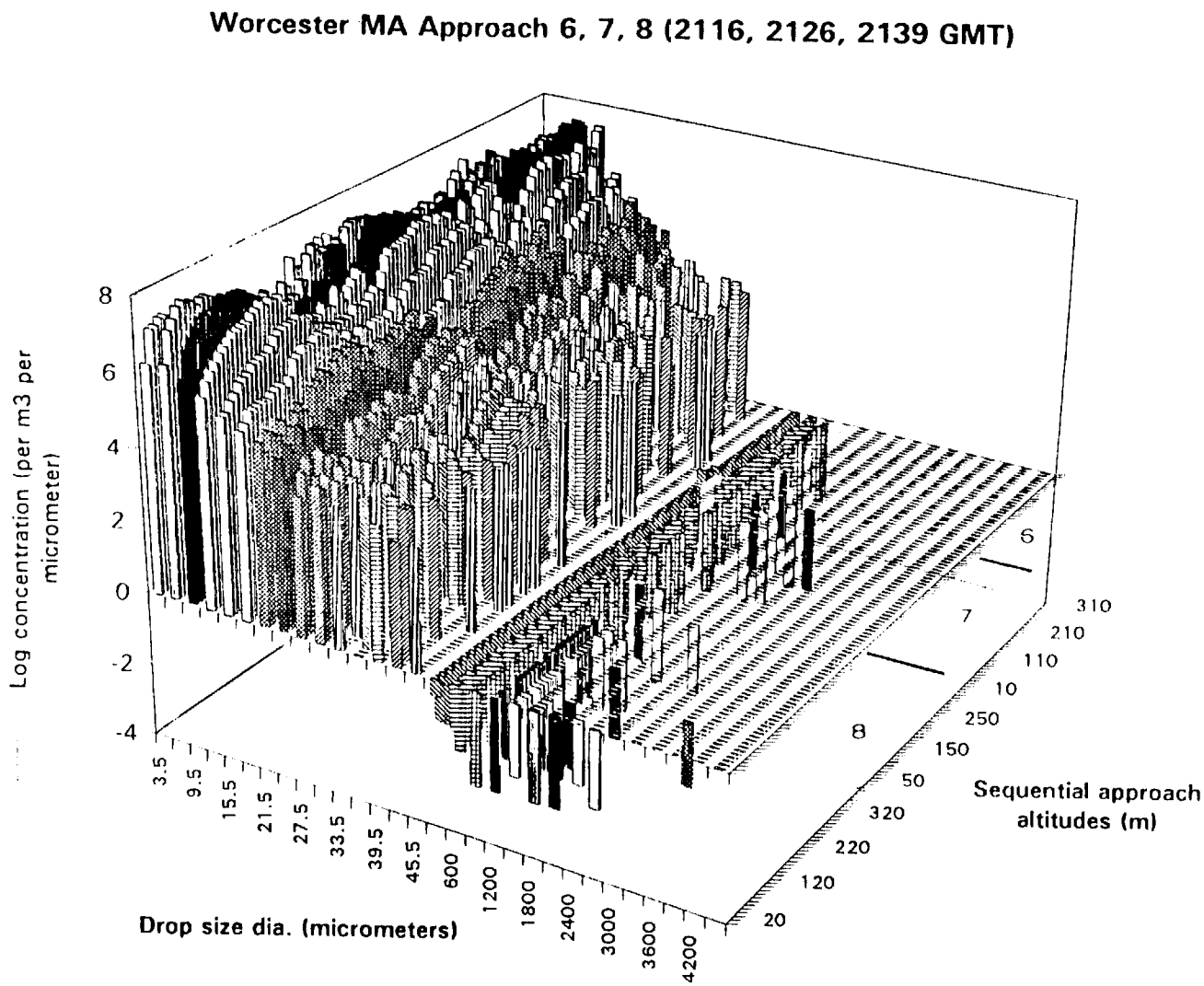



Fig. 25. Drop size distribution for Worcester, MA., approach 6, 7 and 8, logarithm plot.

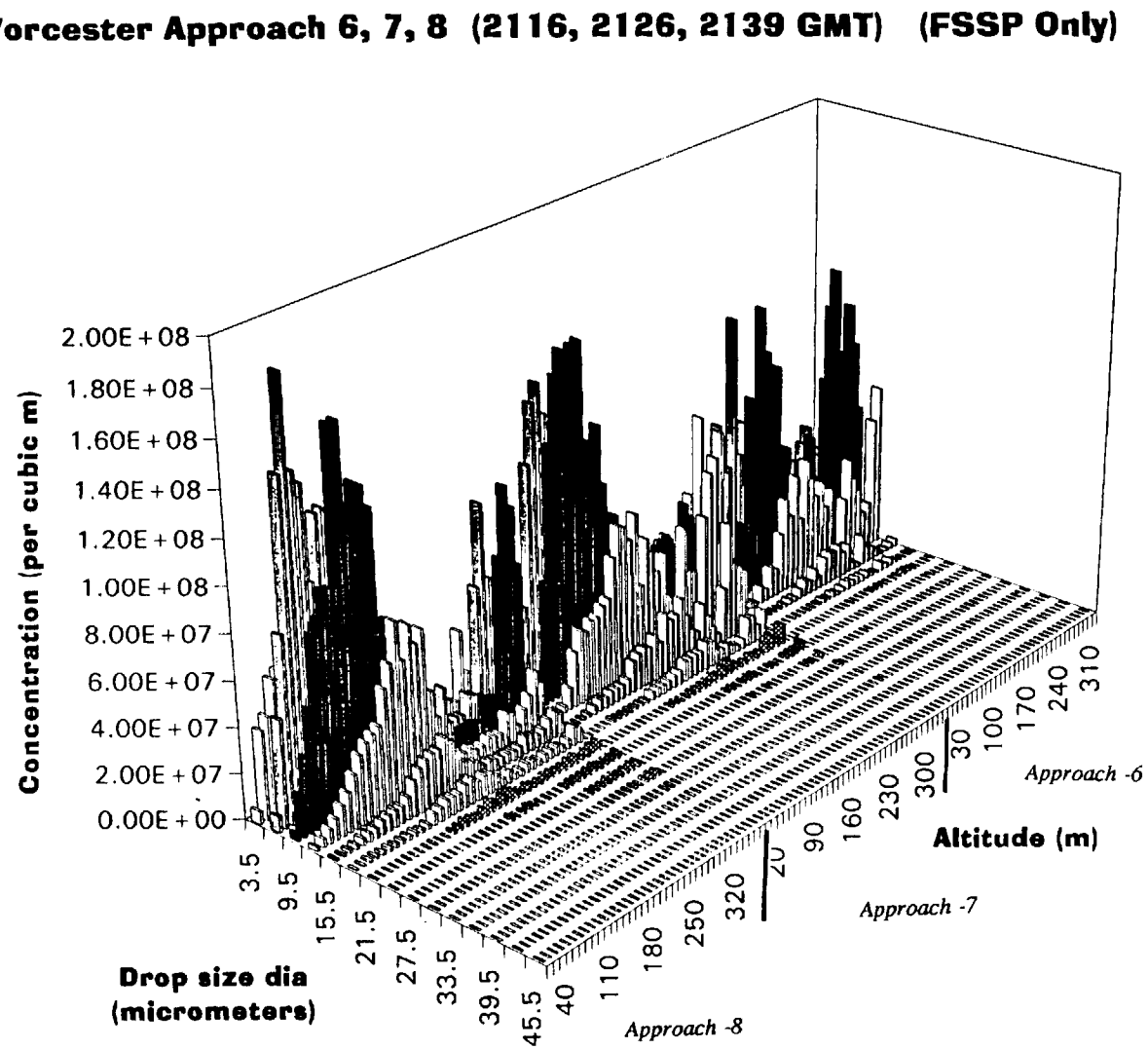
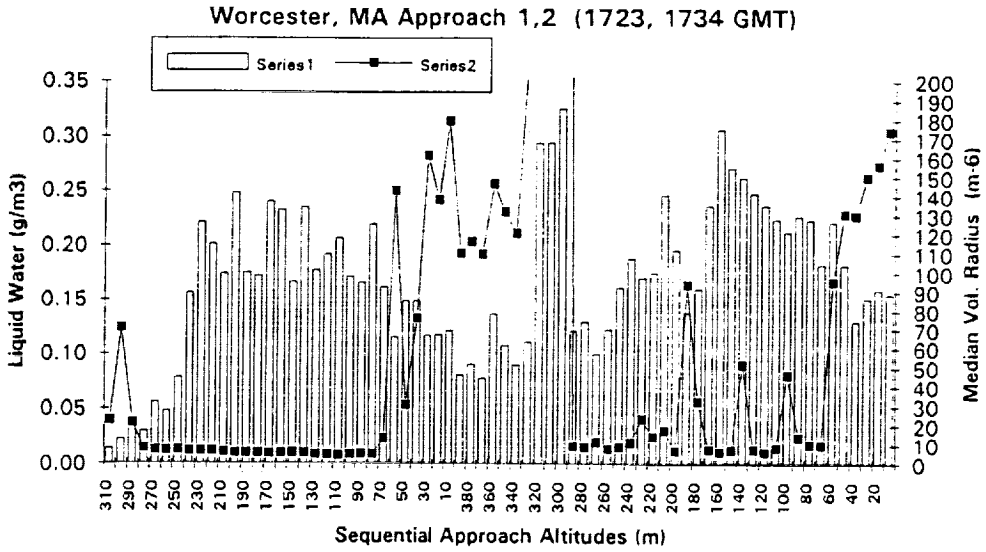



Fig. 26. Drop size distribution for Worcester, MA., approach 6, 7 and 8.



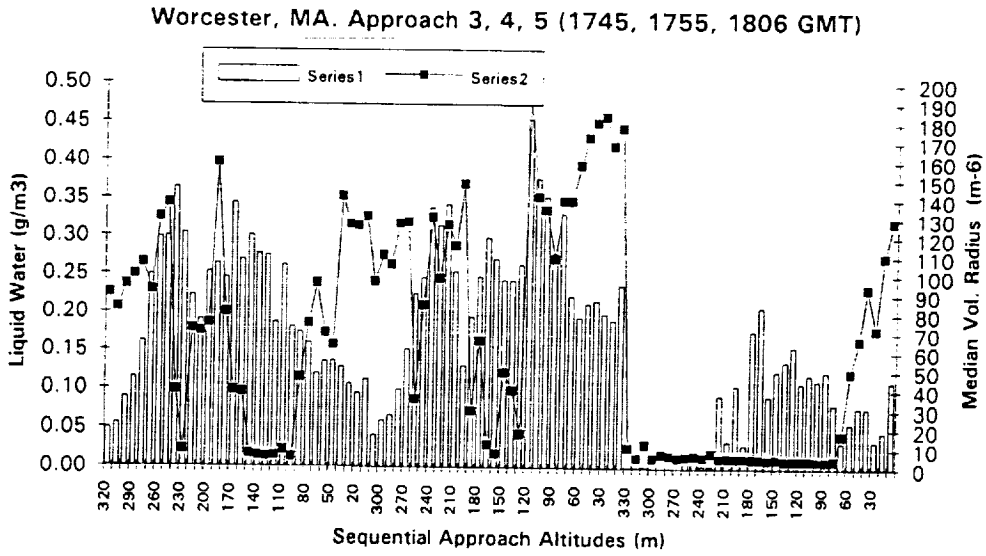




Fig. 27. Liquid water content and median volume radius for Worcester, MA.

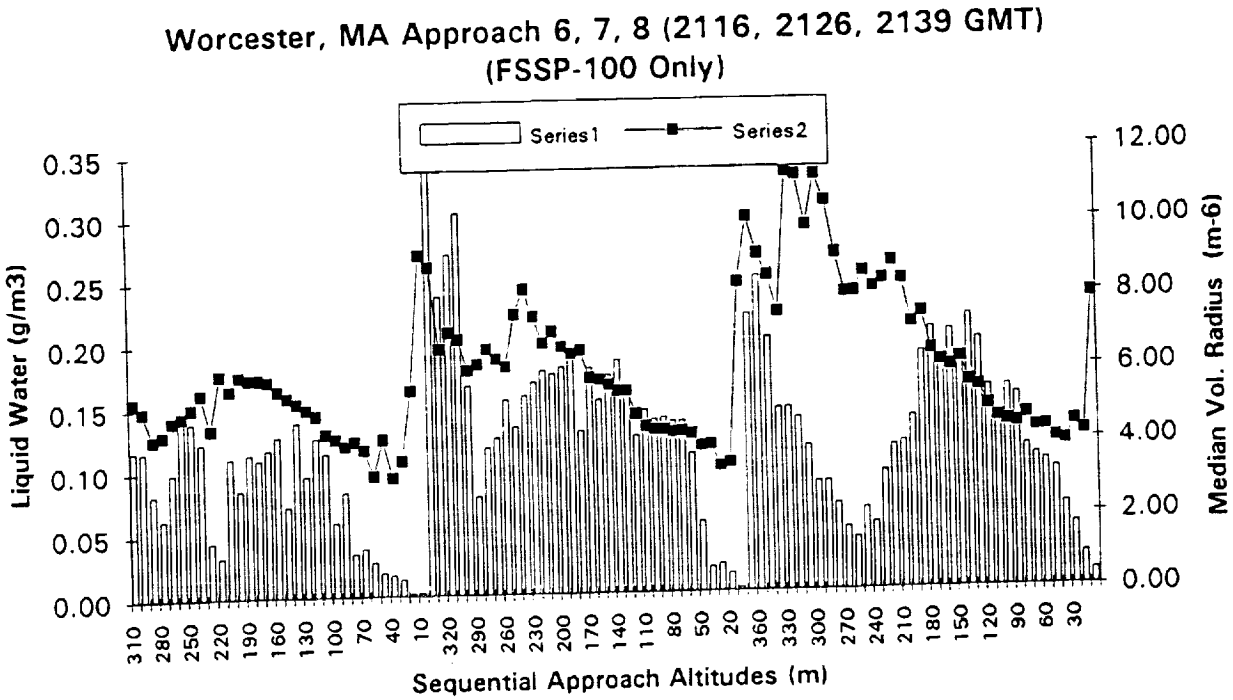



Fig. 28. Liquid water content and median volume radius for Worcester, MA., FSSP only.

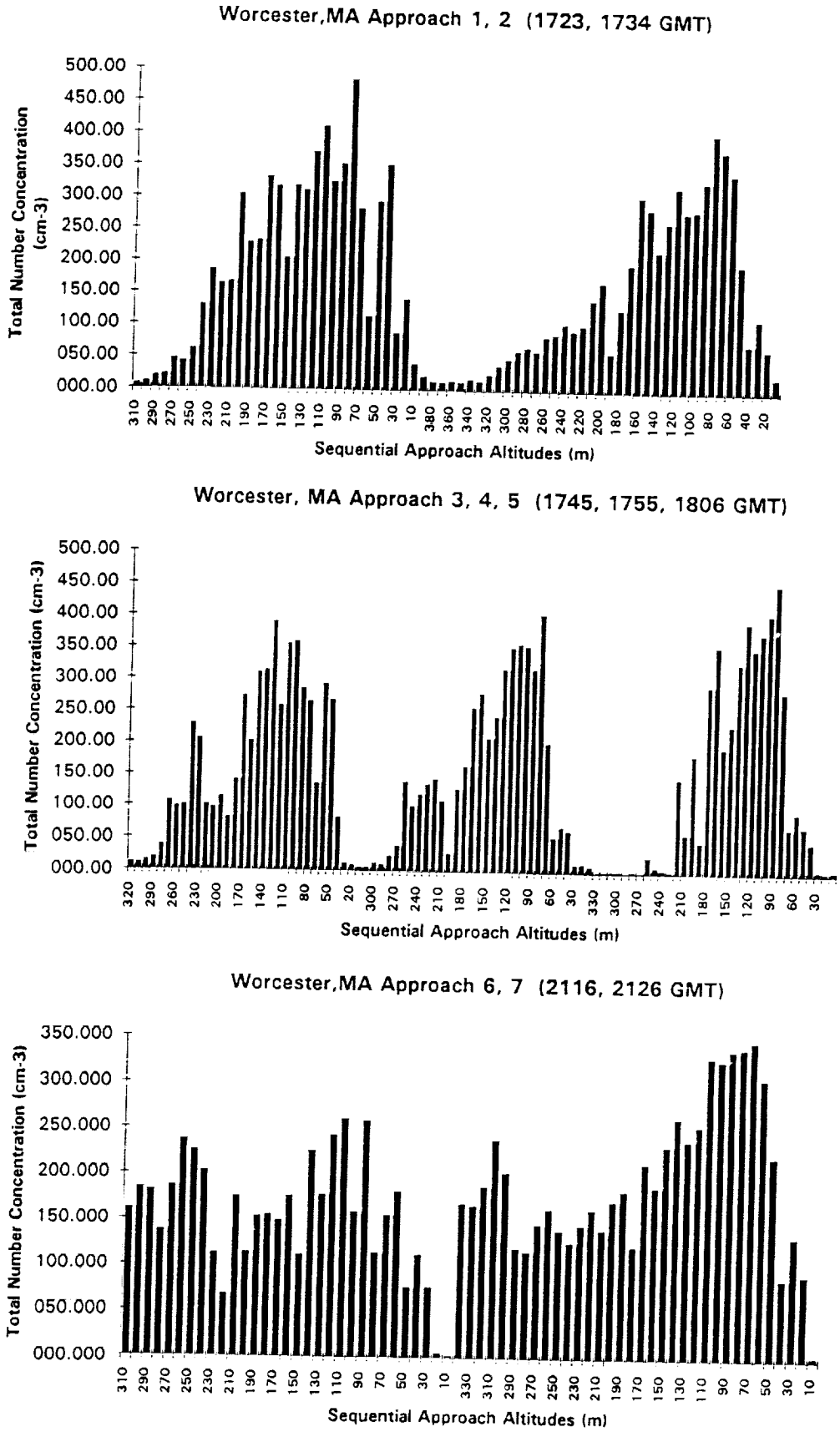



Fig. 29. Total number of particles for Worcester, MA.

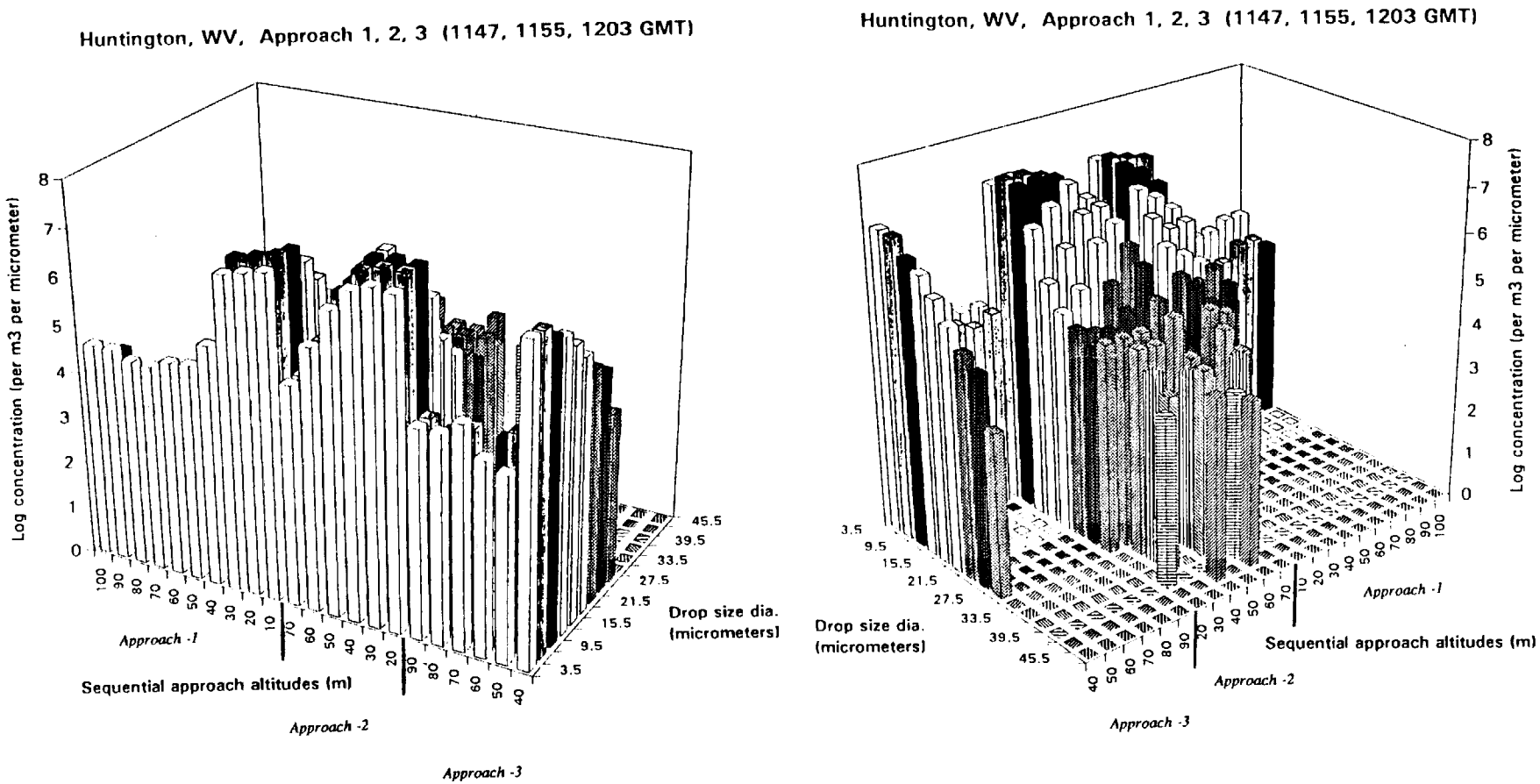



Fig. 30a. Drop size distribution for Huntington, WV, logarithm plot.

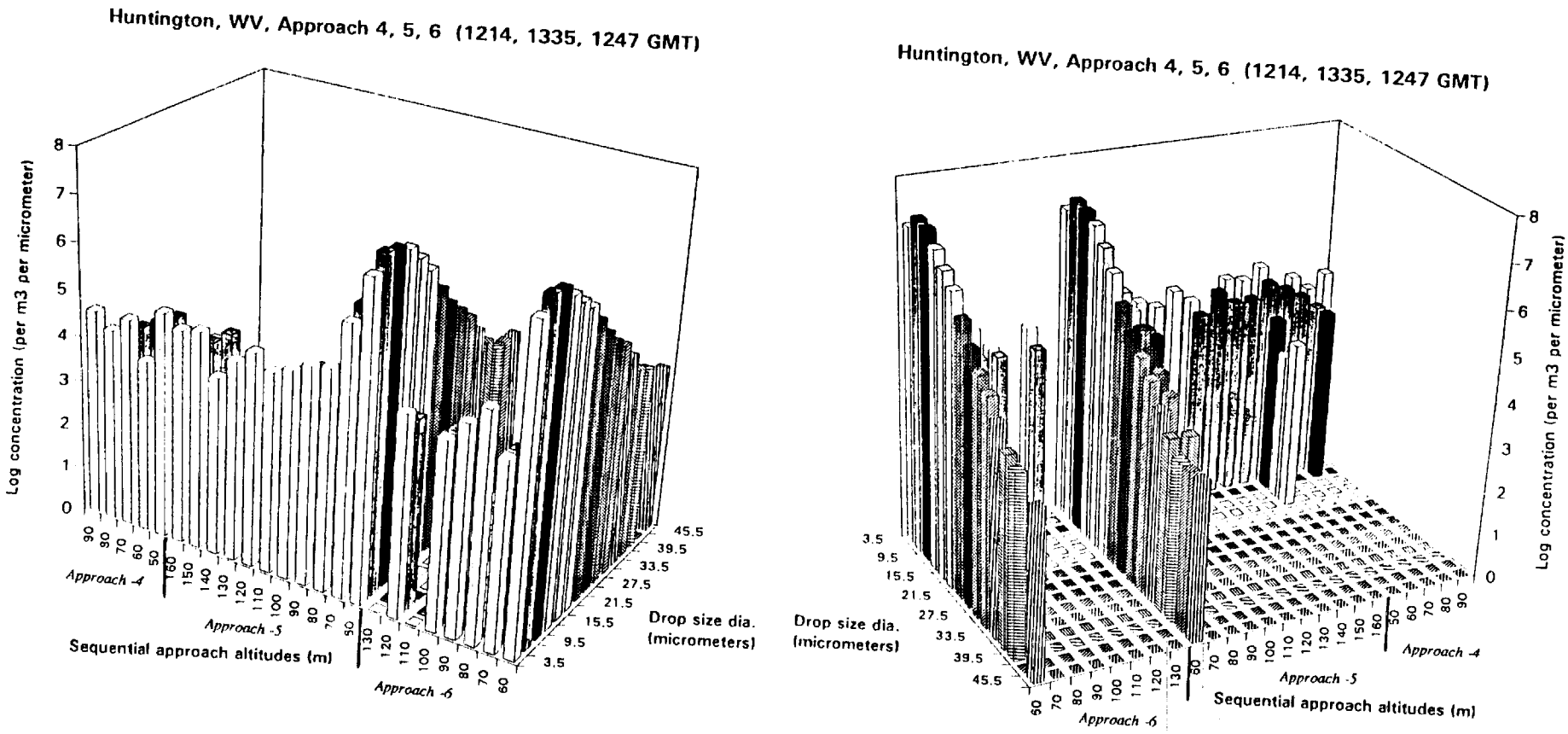



Fig. 30b. Drop size distribution for Huntington, WV, logarithm plot.

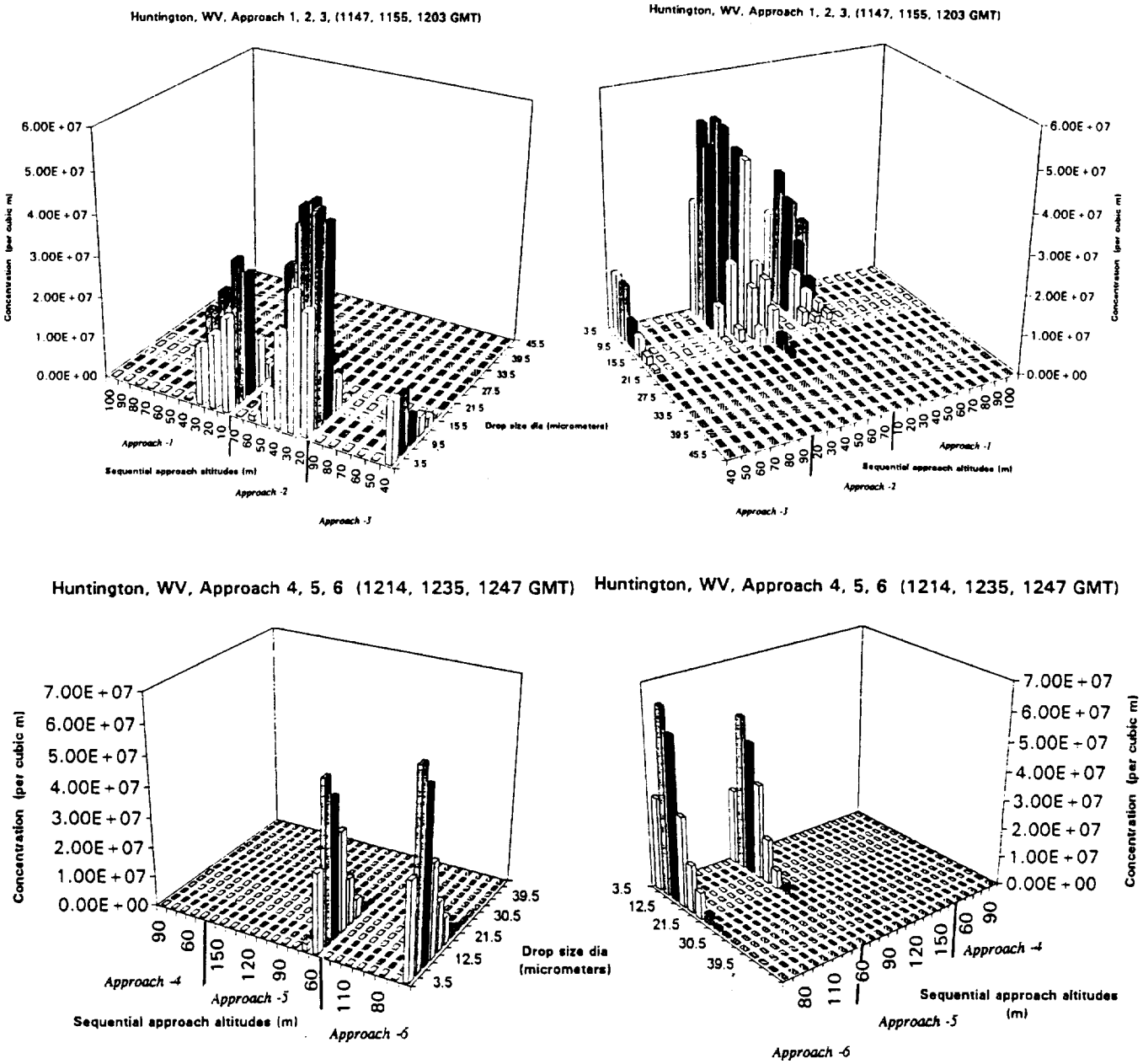
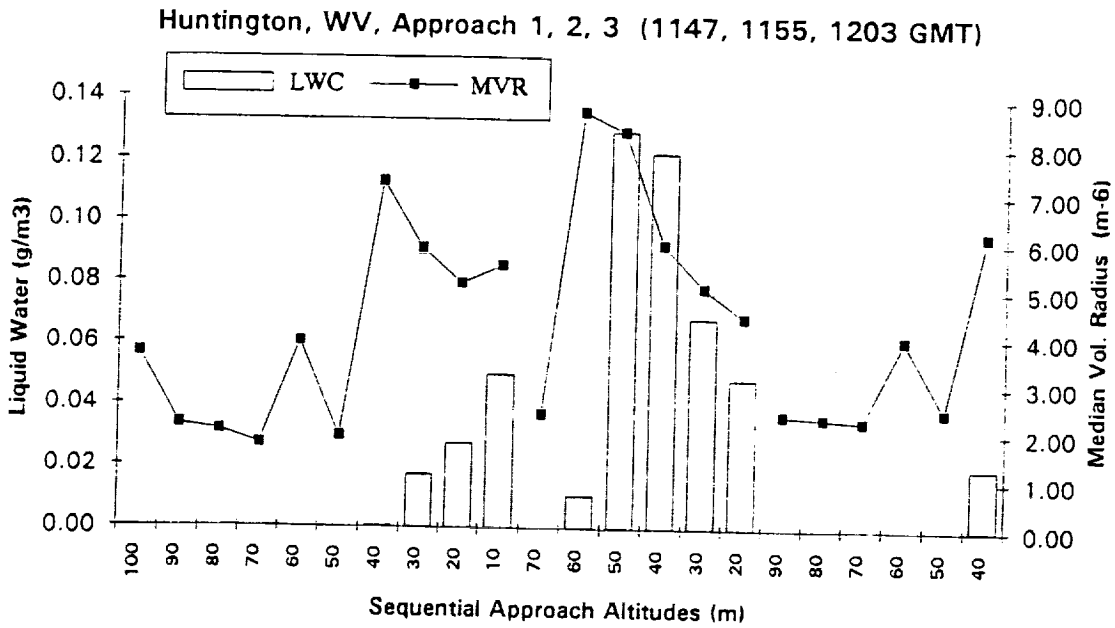



Fig. 31. Drop size distribution for Huntington, WV.



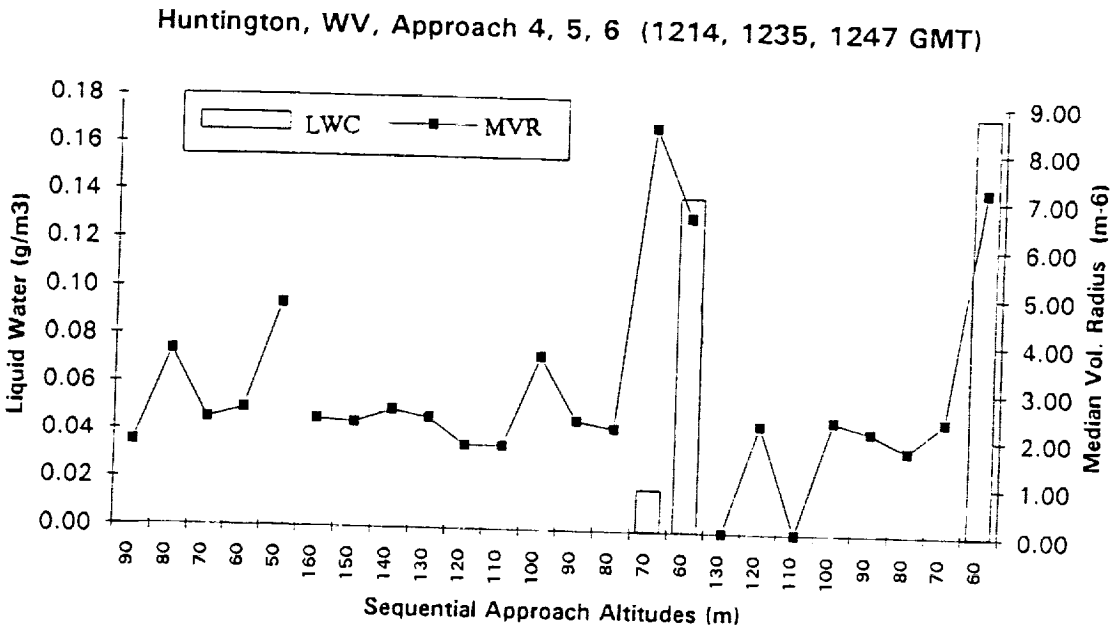
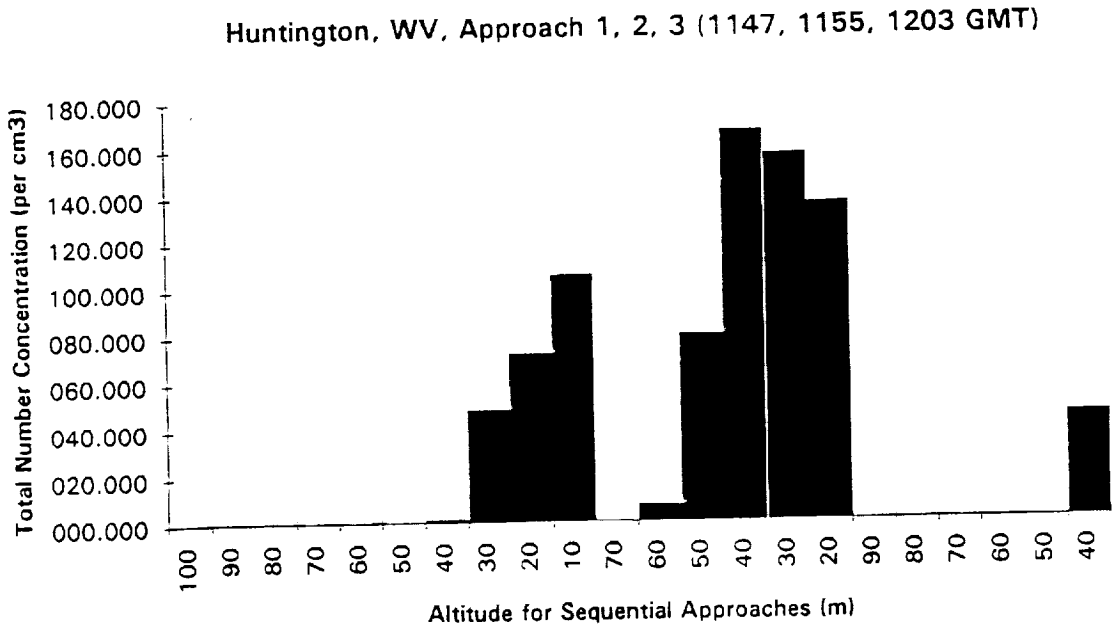




Fig. 32. Liquid water contents and median volume radius for Huntington, WV.



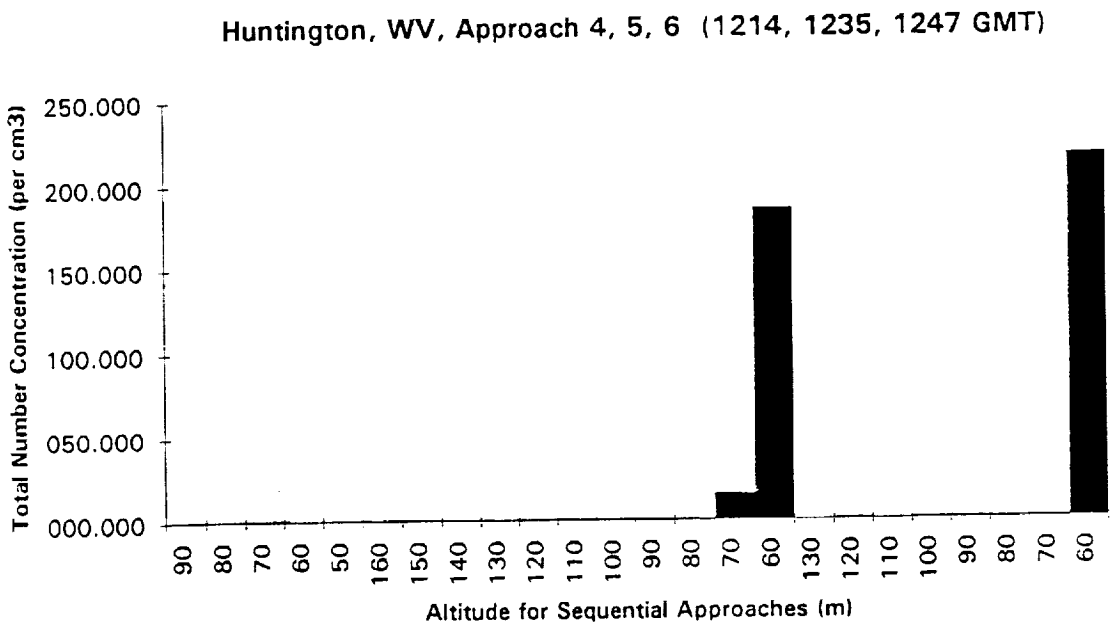




Fig. 33. Total number of particles for Huntington, WV.

# APPENDIX A

Drop size concentration data and related parameters

Vandenberg AFB, CA
August 27, 1992.

| Approach Number | Altitude (m) | bin 1 | bin 2 | bin 3 | bin 4 | bin 5 | bin 6 | bin 7 | bin 8 | bin 9 | bin 10 | bin 11 | bin 12 | bin 13 | bin 14 | bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Begin time* | *End time* | | | | | | Number (per cubic m) | | | | | | | | |
| | 144804 | 144843 | | | | | | Size:3 microns | Range:2-47 microns | | | | | | | |
| 1 | 390 | 1.92E+05 | 9.09E+04 | 2.02E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 380 | 1.64E+05 | 1.47E+05 | 1.01E+04 | 3.38E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 370 | 1.35E+05 | 2.03E+05 | 0 | 6.76E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 360 | 1.62E+05 | 1.62E+05 | 8.11E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 350 | 0 | 0 | 1.63E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 340 | 4.07E+05 | 8.14E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 330 | 4.87E+05 | 8.11E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 320 | 1.62E+05 | 8.09E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 310 | 2.43E+05 | 0 | 4.05E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 300 | 4.04E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 290 | 8.03E+04 | 8.03E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 280 | 3.41E+05 | 6.01E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 270 | 3.24E+05 | 2.43E+05 | 1.62E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 260 | 6.49E+05 | 2.43E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 250 | 5.25E+05 | 4.03E+04 | 4.03E+04 | 0 | 0 | 4.03E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 240 | 7.29E+05 | 2.16E+05 | 5.40E+04 | 0 | 2.71E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 230 | 1.05E+06 | 8.10E+04 | 8.10E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 220 | 1.41E+06 | 2.04E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 210 | 1.34E+06 | 3.02E+05 | 7.51E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 200 | 1.08E+06 | 3.20E+05 | 2.67E+04 | 0 | 0 | 2.67E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 190 | 1.21E+06 | 2.63E+05 | 7.84E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 180 | 6.98E+05 | 4.44E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 170 | 1.20E+06 | 4.91E+05 | 8.18E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| approach | 145958 | 150110 | | | | | | | | | | | | | | |
| 2 | 210 | 7.02E+05 | 2.46E+05 | 4.59E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 200 | 1.03E+06 | 2.19E+05 | 8.46E+04 | 0 | 4.96E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 190 | 1.67E+07 | 1.49E+07 | 2.78E+06 | 4.28E+05 | 6.79E+04 | 3.69E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 180 | 6.69E+07 | 1.53E+08 | 6.43E+07 | 5.95E+06 | 4.88E+05 | 1.38E+05 | 3.45E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 170 | 4.50E+07 | 1.05E+08 | 5.91E+07 | 6.49E+06 | 2.14E+06 | 1.01E+06 | 3.03E+05 | 3.37E+04 | 3.37E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 160 | 5.50E+07 | 2.40E+08 | 1.50E+08 | 1.66E+07 | 2.84E+06 | 8.10E+05 | 2.37E+05 | 1.35E+05 | 6.75E+04 | 6.78E+04 | 0 | 0 | 0 | 0 | 0 |
| 2 | 150 | 5.08E+07 | 1.59E+08 | 9.37E+07 | 2.06E+07 | 3.12E+06 | 1.63E+06 | 4.40E+05 | 2.03E+05 | 6.77E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 140 | 3.39E+07 | 9.78E+07 | 8.28E+07 | 1.47E+07 | 1.91E+06 | 9.99E+05 | 6.00E+05 | 2.46E+05 | 2.21E+04 | 4.41E+04 | 0 | 0 | 0 | 0 | 0 |
| 2 | 130 | 1.94E+07 | 2.81E+07 | 9.91E+06 | 1.65E+06 | 5.50E+05 | 3.43E+05 | 3.03E+05 | 7.06E+04 | 7.06E+04 | 0 | 0 | 3.29E+04 | 0 | 0 | 0 |
| 2 | 120 | 2.15E+07 | 2.98E+07 | 1.61E+07 | 1.39E+07 | 1.97E+07 | 2.48E+07 | 2.54E+07 | 2.39E+07 | 1.08E+07 | 2.13E+06 | 5.74E+05 | 1.02E+05 | 6.75E+04 | 0 | 0 |
| 2 | 110 | 2.74E+07 | 3.01E+07 | 1.92E+07 | 2.16E+07 | 3.23E+07 | 2.65E+07 | 2.80E+07 | 2.43E+07 | 1.05E+07 | 3.79E+06 | 1.05E+06 | 5.62E+05 | 7.02E+04 | 0 | 0 |
| 2 | 100 | 2.65E+07 | 2.86E+07 | 1.85E+07 | 2.13E+07 | 2.95E+07 | 2.73E+07 | 2.85E+07 | 2.46E+07 | 1.28E+07 | 3.66E+06 | 1.34E+06 | 3.22E+05 | 9.24E+04 | 2.31E+04 | 2.31E+04 |
| 2 | 90 | 2.38E+07 | 2.53E+07 | 1.72E+07 | 2.07E+07 | 2.60E+07 | 2.43E+07 | 2.30E+07 | 2.17E+07 | 1.11E+07 | 4.05E+06 | 5.96E+05 | 1.75E+05 | 1.05E+05 | 0 | 0 |
| 2 | 80 | 2.22E+07 | 3.05E+07 | 2.29E+07 | 1.72E+07 | 1.98E+07 | 1.75E+07 | 1.55E+07 | 1.31E+07 | 5.38E+06 | 1.62E+06 | 3.70E+05 | 6.92E+04 | 6.97E+04 | 0 | 0 |
| 2 | 70 | 2.30E+07 | 3.29E+07 | 2.71E+07 | 2.20E+07 | 1.88E+07 | 1.27E+07 | 1.09E+07 | 6.41E+06 | 2.57E+06 | 8.80E+05 | 1.06E+05 | 3.53E+04 | 0 | 0 | 0 |
| 2 | 60 | 1.87E+07 | 3.44E+07 | 2.66E+07 | 1.82E+07 | 1.99E+07 | 1.39E+07 | 1.20E+07 | 1.06E+07 | 5.28E+06 | 2.04E+06 | 6.08E+05 | 7.28E+04 | 2.43E+04 | 0 | 0 |
| 2 | 50 | 2.51E+07 | 5.59E+07 | 3.71E+07 | 1.85E+07 | 1.27E+07 | 6.92E+06 | 4.41E+06 | 2.74E+06 | 1.05E+06 | 4.14E+05 | 4.90E+04 | 7.24E+04 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 40 | 2.31E+07 | 3.73E+07 | 1.87E+07 | 1.13E+07 | 7.26E+06 | 5.03E+06 | 2.39E+06 | 9.36E+05 | 4.93E+05 | 1.10E+05 | 7.68E+04 | 0 | 0 | 0 | 0 |
| 2 | 30 | 2.94E+07 | 3.88E+07 | 2.18E+07 | 1.61E+07 | 8.72E+06 | 4.43E+06 | 2.48E+06 | 1.18E+06 | 4.13E+05 | 7.52E+04 | 1.13E+05 | 1.89E+04 | 1.90E+04 | 0 | 0 |
| 2 | 20 | 2.98E+07 | 3.42E+07 | 2.14E+07 | 1.37E+07 | 3.28E+06 | 1.05E+06 | 4.87E+05 | 2.73E+05 | 6.03E+04 | 7.75E+04 | 1.60E+04 | 0 | 1.60E+04 | 0 | 0 |
| 2 | 10 | 1.23E+07 | 1.31E+07 | 1.11E+07 | 6.82E+06 | 4.87E+06 | 4.54E+06 | 3.42E+06 | 2.41E+06 | 1.65E+06 | 6.15E+05 | 3.30E+05 | 1.01E+05 | 3.80E+04 | 1.89E+04 | 3688 |
| approach | 151247 | 151343 | | | | | | | | | | | | | | |
| 3 | 200 | 1.11E+06 | 6.84E+05 | 2.14E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 190 | 2.04E+07 | 6.70E+07 | 6.65E+07 | 1.93E+07 | 2.53E+06 | 7.67E+05 | 1.59E+05 | 6.79E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 180 | 4.51E+07 | 1.99E+08 | 1.26E+08 | 1.44E+07 | 1.68E+06 | 2.06E+05 | 1.03E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 170 | 5.73E+07 | 1.10E+08 | 5.88E+07 | 1.17E+07 | 2.99E+06 | 1.14E+06 | 4.55E+05 | 1.58E+05 | 4.49E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 160 | 3.22E+07 | 1.06E+08 | 1.07E+08 | 2.27E+07 | 4.67E+06 | 2.94E+06 | 1.96E+06 | 1.05E+06 | 3.72E+05 | 6.76E+04 | 6.77E+04 | 0 | 0 | 0 | 0 |
| 3 | 150 | 3.83E+07 | 8.59E+07 | 6.89E+07 | 2.69E+07 | 7.26E+06 | 4.34E+06 | 2.25E+06 | 9.72E+05 | 3.13E+05 | 3.50E+04 | 0 | 0 | 0 | 0 | 0 |
| 3 | 140 | 4.86E+07 | 5.37E+07 | 4.23E+07 | 3.42E+07 | 1.27E+07 | 8.34E+06 | 5.51E+06 | 2.09E+06 | 5.30E+05 | 2.12E+05 | 7.12E+04 | 3.51E+04 | 0 | 0 | 0 |
| 3 | 130 | 1.43E+07 | 2.78E+07 | 2.22E+07 | 1.65E+07 | 8.64E+06 | 6.74E+06 | 5.03E+06 | 2.31E+06 | 6.85E+05 | 1.89E+05 | 2.38E+04 | 0 | 0 | 0 | 0 |
| 3 | 120 | 2.62E+07 | 5.61E+07 | 9.52E+07 | 4.99E+07 | 1.42E+07 | 7.37E+06 | 5.62E+06 | 3.13E+06 | 1.24E+06 | 3.34E+05 | 1.20E+05 | 9.54E+04 | 2.36E+04 | 0 | 0 |
| 3 | 110 | 2.75E+07 | 6.60E+07 | 9.55E+07 | 3.98E+07 | 1.38E+07 | 8.23E+06 | 5.54E+06 | 3.19E+06 | 1.59E+06 | 5.01E+05 | 1.67E+05 | 2.39E+04 | 2.35E+04 | 0 | 0 |
| 3 | 100 | 3.16E+07 | 7.20E+07 | 9.68E+07 | 3.61E+07 | 1.87E+07 | 1.09E+07 | 8.00E+06 | 5.74E+06 | 2.59E+06 | 9.30E+05 | 2.92E+05 | 7.37E+04 | 2.40E+04 | 0 | 0 |
| 3 | 90 | 2.94E+07 | 6.22E+07 | 6.12E+07 | 3.41E+07 | 1.67E+07 | 8.52E+06 | 4.65E+06 | 2.29E+06 | 1.44E+06 | 3.32E+05 | 2.58E+05 | 1.48E+05 | 7.38E+04 | 0 | 0 |
| 3 | 80 | 2.89E+07 | 6.07E+07 | 5.18E+07 | 2.63E+07 | 1.67E+07 | 1.15E+07 | 8.89E+06 | 6.37E+06 | 2.55E+06 | 1.09E+06 | 3.46E+05 | 1.24E+05 | 5.00E+04 | 0 | 2.45E+04 |
| 3 | 70 | 4.31E+07 | 1.43E+08 | 1.05E+08 | 2.84E+07 | 1.15E+07 | 6.09E+06 | 3.76E+06 | 2.13E+06 | 8.50E+05 | 3.74E+05 | 1.50E+05 | 2.53E+04 | 5.06E+04 | 2.46E+04 | 2.53E+04 |
| 3 | 60 | 3.26E+07 | 7.99E+07 | 5.22E+07 | 2.38E+07 | 1.28E+07 | 6.16E+06 | 3.47E+06 | 2.06E+06 | 9.36E+05 | 3.77E+05 | 1.52E+05 | 4.99E+04 | 0 | 0 | 0 |
| 3 | 50 | 4.42E+07 | 9.92E+07 | 5.57E+07 | 2.29E+07 | 1.01E+07 | 4.38E+06 | 2.11E+06 | 1.24E+06 | 5.58E+05 | 2.03E+05 | 1.52E+05 | 2.55E+04 | 0 | 0 | 0 |
| 3 | 40 | 3.16E+07 | 5.01E+07 | 3.02E+07 | 2.35E+07 | 1.21E+07 | 6.47E+06 | 3.24E+06 | 1.92E+06 | 8.20E+05 | 2.57E+05 | 1.28E+05 | 7.77E+04 | 2.55E+04 | 0 | 2.62E+04 |
| 3 | 30 | 4.01E+07 | 5.63E+07 | 2.98E+07 | 2.20E+07 | 6.99E+06 | 3.21E+06 | 1.41E+06 | 8.23E+05 | 3.41E+05 | 1.09E+05 | 9.34E+04 | 1.56E+04 | 0 | 0 | 0 |
| 3 | 20 | 3.42E+07 | 4.20E+07 | 3.01E+07 | 1.66E+07 | 4.38E+06 | 1.82E+06 | 7.61E+05 | 4.93E+05 | 1.92E+05 | 1.64E+05 | 5.79E+04 | 5.81E+04 | 0 | 0 | 9652 |
| approach | 152342 | 152434 | | | | | | | | | | | | | | |
| 4 | 200 | 1.08E+06 | 9.84E+05 | 1.41E+05 | 2.82E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 190 | 7.44E+06 | 1.95E+07 | 1.70E+07 | 4.93E+06 | 9.15E+05 | 2.23E+05 | 4.46E+04 | 2.23E+04 | 2.23E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 180 | 1.96E+07 | 5.00E+07 | 5.50E+07 | 3.75E+07 | 1.27E+07 | 3.79E+06 | 1.19E+06 | 2.73E+05 | 1.36E+05 | 3.41E+04 | 0 | 0 | 0 | 0 | 0 |
| 4 | 170 | 2.13E+07 | 4.56E+07 | 4.54E+07 | 3.37E+07 | 1.92E+07 | 1.21E+07 | 5.75E+06 | 1.50E+06 | 4.22E+05 | 1.74E+05 | 1.40E+05 | 0 | 0 | 0 | 0 |
| 4 | 160 | 3.37E+07 | 3.81E+07 | 3.24E+07 | 3.39E+07 | 1.56E+07 | 1.19E+07 | 5.58E+06 | 1.19E+06 | 3.16E+05 | 1.76E+05 | 3.46E+04 | 0 | 0 | 0 | 0 |
| 4 | 150 | 9.14E+06 | 1.86E+07 | 2.19E+07 | 1.71E+07 | 7.19E+06 | 3.83E+06 | 1.34E+06 | 3.69E+05 | 1.01E+05 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 140 | 1.99E+07 | 4.16E+07 | 2.20E+07 | 1.26E+07 | 1.09E+07 | 1.21E+07 | 8.56E+06 | 4.07E+06 | 1.56E+06 | 2.53E+05 | 1.84E+05 | 4.59E+04 | 0 | 2.30E+04 | 0 |
| 4 | 130 | 2.35E+07 | 3.62E+07 | 2.40E+07 | 2.91E+07 | 3.55E+07 | 3.29E+07 | 2.50E+07 | 1.25E+07 | 4.75E+06 | 1.45E+06 | 3.52E+05 | 3.46E+04 | 3.46E+04 | 0 | 3.64E+04 |
| 4 | 120 | 2.22E+07 | 4.22E+07 | 3.82E+07 | 2.98E+07 | 2.66E+07 | 2.24E+07 | 1.48E+07 | 7.75E+06 | 2.50E+06 | 5.40E+05 | 1.42E+05 | 1.41E+05 | 2.34E+04 | 0 | 0 |
| 4 | 110 | 2.63E+07 | 5.07E+07 | 5.35E+07 | 2.96E+07 | 2.41E+07 | 2.11E+07 | 1.29E+07 | 9.43E+06 | 3.96E+06 | 1.76E+06 | 3.53E+05 | 1.41E+05 | 0 | 0 | 0 |
| 4 | 100 | 3.29E+07 | 7.16E+07 | 8.01E+07 | 3.45E+07 | 1.95E+07 | 1.62E+07 | 1.27E+07 | 7.63E+06 | 3.34E+06 | 1.10E+06 | 3.81E+05 | 7.14E+04 | 4.78E+04 | 7.14E+04 | 0 |
| 4 | 90 | 2.93E+07 | 4.03E+07 | 3.38E+07 | 2.98E+07 | 2.84E+07 | 1.96E+07 | 1.16E+07 | 5.55E+06 | 1.91E+06 | 3.60E+05 | 1.08E+05 | 1.08E+05 | 0 | 0 | 0 |
| 4 | 80 | 2.50E+07 | 5.25E+07 | 4.60E+07 | 2.74E+07 | 2.36E+07 | 1.89E+07 | 1.16E+07 | 5.85E+06 | 2.24E+06 | 7.13E+05 | 1.43E+05 | 3.55E+04 | 0 | 0 | 0 |
| 4 | 70 | 2.92E+07 | 6.52E+07 | 4.73E+07 | 2.27E+07 | 1.96E+07 | 1.84E+07 | 1.21E+07 | 9.86E+06 | 3.44E+06 | 1.11E+06 | 6.81E+05 | 2.15E+05 | 0 | 0 | 0 |
| 4 | 60 | 2.13E+07 | 3.49E+07 | 2.98E+07 | 3.01E+07 | 2.74E+07 | 1.80E+07 | 1.16E+07 | 6.61E+06 | 2.69E+06 | 6.37E+05 | 2.83E+05 | 9.43E+04 | 4.71E+04 | 2.36E+04 | 0 |
| 4 | 50 | 2.79E+07 | 6.12E+07 | 3.72E+07 | 2.41E+07 | 1.73E+07 | 1.16E+07 | 6.21E+06 | 3.07E+06 | 1.12E+06 | 5.08E+05 | 3.64E+04 | 0 | 0 | 0 | 0 |
| 4 | 40 | 3.43E+07 | 5.95E+07 | 3.37E+07 | 2.23E+07 | 1.57E+07 | 9.47E+06 | 5.53E+06 | 2.21E+06 | 1.02E+06 | 3.89E+05 | 4.85E+04 | 0 | 2.42E+04 | 0 | 0 |
| 4 | 30 | 4.49E+07 | 7.69E+07 | 3.54E+07 | 1.96E+07 | 1.52E+07 | 1.04E+07 | 6.94E+06 | 3.98E+06 | 1.91E+06 | 7.46E+05 | 3.11E+05 | 1.49E+05 | 2.45E+04 | 1.23E+04 | 0 |
| 4 | 20 | 3.40E+07 | 4.32E+07 | 2.43E+07 | 2.10E+07 | 1.04E+07 | 6.27E+06 | 3.80E+06 | 1.88E+06 | 8.90E+05 | 2.75E+05 | 1.38E+05 | 6.37E+04 | 3.10E+04 | 1.09E+04 | 0 |
| approach | 153429 | 153543 | | | | | | | | | | | | | | |
| 5 | 210 | 1.25E+06 | 1.02E+06 | 1.92E+05 | 9.62E+04 | 3.47E+04 | 3.47E+04 | 0 | 3.47E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 200 | 1.81E+07 | 1.77E+07 | 6.20E+06 | 4.66E+06 | 4.70E+06 | 5.47E+06 | 4.32E+06 | 2.59E+06 | 8.80E+05 | 1.71E+05 | 7.35E+04 | 0 | 0 | 0 | 0 |
| 5 | 190 | 2.15E+07 | 2.74E+07 | 1.48E+07 | 1.94E+07 | 2.38E+07 | 2.54E+07 | 2.36E+07 | 1.32E+07 | 5.44E+06 | 1.40E+06 | 2.15E+05 | 3.59E+04 | 0 | 0 | 0 |
| 5 | 180 | 1.84E+07 | 2.67E+07 | 1.97E+07 | 2.75E+07 | 3.48E+07 | 4.05E+07 | 2.76E+07 | 1.48E+07 | 5.78E+06 | 1.46E+06 | 3.13E+05 | 2.09E+05 | 0 | 3.48E+04 | 0 |
| 5 | 170 | 2.21E+07 | 2.91E+07 | 2.07E+07 | 2.87E+07 | 3.71E+07 | 3.87E+07 | 2.41E+07 | 1.27E+07 | 4.67E+06 | 1.31E+06 | 2.48E+05 | 1.06E+05 | 3.53E+04 | 0 | 0 |
| 5 | 160 | 1.91E+07 | 2.05E+07 | 2.68E+07 | 4.56E+07 | 5.35E+07 | 5.37E+07 | 3.00E+07 | 1.42E+07 | 5.27E+06 | 1.68E+06 | 1.01E+06 | 3.15E+05 | 3.48E+04 | 7.01E+04 | 0 |
| 5 | 150 | 2.07E+07 | 3.25E+07 | 6.04E+07 | 6.89E+07 | 4.30E+07 | 3.40E+07 | 2.11E+07 | 1.12E+07 | 3.83E+06 | 1.36E+06 | 3.48E+05 | 6.96E+04 | 3.48E+04 | 6.96E+04 | 0 |
| 5 | 140 | 2.66E+07 | 4.05E+07 | 7.05E+07 | 7.08E+07 | 3.87E+07 | 2.75E+07 | 1.44E+07 | 6.75E+06 | 2.40E+06 | 5.65E+05 | 3.18E+05 | 1.06E+05 | 1.06E+05 | 0 | 0 |
| 5 | 130 | 3.08E+07 | 4.71E+07 | 9.42E+07 | 7.46E+07 | 3.05E+07 | 1.68E+07 | 6.99E+06 | 3.12E+06 | 1.11E+06 | 2.51E+05 | 3.58E+04 | 3.58E+04 | 3.59E+04 | 0 | 0 |
| 5 | 120 | 2.55E+07 | 4.32E+07 | 5.91E+07 | 5.22E+07 | 3.59E+07 | 2.41E+07 | 1.07E+07 | 3.75E+06 | 1.16E+06 | 2.65E+05 | 7.29E+04 | 0 | 4.86E+04 | 0 | 0 |
| 5 | 110 | 3.02E+07 | 5.85E+07 | 9.29E+07 | 5.66E+07 | 3.06E+07 | 1.82E+07 | 8.67E+06 | 3.11E+06 | 1.23E+06 | 3.54E+05 | 1.88E+04 | 3.68E+04 | 0 | 0 | 1.88E+04 |
| 5 | 100 | 2.66E+07 | 4.47E+07 | 5.75E+07 | 5.17E+07 | 3.57E+07 | 2.07E+07 | 7.62E+06 | 2.46E+06 | 6.05E+05 | 7.65E+04 | 3.83E+04 | 7.55E+04 | 0 | 0 | 0 |
| 5 | 90 | 3.11E+07 | 6.94E+07 | 8.09E+07 | 4.51E+07 | 2.28E+07 | 1.11E+07 | 3.70E+06 | 1.34E+06 | 3.02E+05 | 1.01E+05 | 1.00E+05 | 0 | 0 | 0 | 0 |
| 5 | 80 | 2.22E+07 | 4.05E+07 | 5.02E+07 | 4.63E+07 | 2.96E+07 | 1.44E+07 | 4.92E+06 | 1.83E+06 | 5.44E+05 | 1.24E+05 | 0 | 2.48E+04 | 2.48E+04 | 0 | 0 |
| 5 | 70 | 2.26E+07 | 5.04E+07 | 5.80E+07 | 4.41E+07 | 2.35E+07 | 9.86E+06 | 3.08E+06 | 6.75E+05 | 2.00E+05 | 1.25E+05 | 5.00E+04 | 2.50E+04 | 0 | 0 | 0 |
| 5 | 60 | 2.57E+07 | 5.97E+07 | 6.19E+07 | 4.13E+07 | 1.80E+07 | 8.19E+06 | 1.94E+06 | 8.27E+05 | 3.08E+05 | 5.23E+04 | 5.19E+04 | 0 | 0 | 0 | 0 |
| 5 | 50 | 2.75E+07 | 4.92E+07 | 4.97E+07 | 3.40E+07 | 1.02E+07 | 2.96E+06 | 6.58E+05 | 3.97E+05 | 5.20E+04 | 7.98E+04 | 0 | 0 | 0 | 2.71E+04 | 0 |
| 5 | 40 | 3.25E+07 | 6.12E+07 | 5.00E+07 | 2.63E+07 | 7.12E+06 | 1.65E+06 | 6.26E+05 | 2.35E+05 | 2.75E+05 | 1.19E+05 | 0 | 0 | 0 | 0 | 0 |
| 5 | 30 | 4.59E+07 | 8.07E+07 | 4.77E+07 | 1.68E+07 | 3.13E+06 | 7.99E+05 | 4.52E+05 | 1.85E+05 | 4.11E+04 | 2.10E+04 | 2.01E+04 | 0 | 2.01E+04 | 0 | 0 |
| 5 | 20 | 2.98E+07 | 3.69E+07 | 3.00E+07 | 1.77E+07 | 4.62E+06 | 1.38E+06 | 2.27E+05 | 1.24E+05 | 8.24E+04 | 2.03E+04 | 4.17E+04 | 0 | 0 | 0 | 0 |
| 5 | 10 | 1.18E+07 | 1.80E+07 | 1.84E+07 | 1.08E+07 | 3.42E+06 | 1.70E+06 | 9.28E+05 | 4.74E+05 | 2.25E+05 | 1.15E+05 | 6.23E+04 | 5.08E+04 | 3624 | 1.08E+04 | 3638 |
| approach | 154535 | 154635 | | | | | | | | | | | | | | |
| 6 | 240 | 8.41E+05 | 1.15E+05 | 8.34E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 230 | 6.38E+06 | 5.78E+06 | 2.64E+06 | 1.39E+06 | 1.01E+06 | 1.51E+06 | 8.50E+05 | 8.50E+05 | 2.83E+05 | 3.54E+04 | 0 | 0 | 0 | 0 | 0 |
| 6 | 220 | 1.44E+07 | 2.32E+07 | 3.63E+07 | 4.13E+07 | 1.89E+07 | 1.09E+07 | 6.15E+06 | 2.81E+06 | 6.75E+05 | 2.25E+05 | 1.13E+05 | 3.75E+04 | 0 | 0 | 0 |
| 6 | 210 | 2.67E+07 | 3.25E+07 | 3.98E+07 | 4.14E+07 | 2.06E+07 | 1.46E+07 | 8.26E+06 | 4.28E+06 | 1.65E+06 | 4.02E+05 | 1.83E+05 | 0 | 0 | 0 | 0 |
| 6 | 200 | 1.99E+07 | 2.37E+07 | 3.56E+07 | 5.62E+07 | 3.55E+07 | 2.36E+07 | 1.55E+07 | 7.41E+06 | 2.10E+06 | 5.99E+05 | 2.04E+05 | 4.40E+04 | 0 | 0 | 0 |
| 6 | 190 | 2.17E+07 | 3.03E+07 | 4.97E+07 | 6.59E+07 | 3.94E+07 | 3.10E+07 | 1.82E+07 | 9.27E+06 | 3.45E+06 | 9.96E+05 | 4.38E+05 | 9.73E+04 | 2.44E+04 | 0 | 0 |
| 6 | 180 | 2.60E+07 | 4.04E+07 | 1.05E+08 | 1.30E+08 | 4.13E+07 | 2.12E+07 | 1.04E+07 | 4.52E+06 | 1.73E+06 | 6.78E+05 | 3.02E+05 | 1.51E+05 | 0 | 0 | 0 |
| 6 | 170 | 2.66E+07 | 4.61E+07 | 1.03E+08 | 1.08E+08 | 3.91E+07 | 2.16E+07 | 1.07E+07 | 4.51E+06 | 1.68E+06 | 6.35E+05 | 2.21E+05 | 9.59E+04 | 1.65E+04 | 8218 | 0 |
| 6 | 160 | 2.71E+07 | 5.18E+07 | 1.02E+08 | 8.56E+07 | 3.69E+07 | 2.21E+07 | 1.10E+07 | 4.49E+06 | 1.63E+06 | 5.91E+05 | 1.40E+05 | 4.11E+04 | 3.30E+04 | 1.64E+04 | 0 |
| 6 | 150 | 2.61E+07 | 5.62E+07 | 9.86E+07 | 7.44E+07 | 3.66E+07 | 2.00E+07 | 9.95E+06 | 4.23E+06 | 1.40E+06 | 4.42E+05 | 1.07E+05 | 2.05E+04 | 1.65E+04 | 8218 | 0 |
| 6 | 140 | 2.52E+07 | 6.07E+07 | 9.52E+07 | 6.32E+07 | 3.64E+07 | 1.79E+07 | 8.96E+06 | 3.97E+06 | 1.18E+06 | 2.94E+05 | 7.34E+04 | 0 | 0 | 0 | 0 |
| 6 | 130 | 2.05E+07 | 4.64E+07 | 6.68E+07 | 4.70E+07 | 2.59E+07 | 1.38E+07 | 4.82E+06 | 1.80E+06 | 3.60E+05 | 2.16E+05 | 0 | 7.20E+04 | 0 | 0 | 0 |
| 6 | 120 | 1.64E+07 | 3.67E+07 | 4.80E+07 | 4.19E+07 | 3.08E+07 | 1.85E+07 | 8.18E+06 | 3.07E+06 | 1.07E+06 | 1.85E+05 | 1.48E+05 | 0 | 0 | 0 | 0 |
| 6 | 110 | 3.07E+07 | 6.75E+07 | 9.56E+07 | 5.91E+07 | 3.46E+07 | 1.95E+07 | 7.85E+06 | 2.56E+06 | 1.11E+06 | 2.22E+05 | 1.83E+04 | 7.41E+04 | 0 | 1.87E+04 | 0 |
| 6 | 100 | 3.86E+07 | 1.07E+08 | 1.53E+08 | 5.90E+07 | 2.77E+07 | 1.62E+07 | 8.10E+06 | 2.91E+06 | 7.73E+05 | 3.31E+05 | 7.36E+04 | 0 | 0 | 0 | 3.69E+04 |
| 6 | 90 | 3.27E+07 | 8.67E+07 | 1.27E+08 | 5.46E+07 | 2.89E+07 | 1.68E+07 | 9.07E+06 | 3.52E+06 | 1.37E+06 | 5.13E+05 | 1.22E+05 | 2.44E+04 | 0 | 0 | 0 |
| 6 | 80 | 2.20E+07 | 5.06E+07 | 6.81E+07 | 5.03E+07 | 3.28E+07 | 1.96E+07 | 9.00E+06 | 4.30E+06 | 1.58E+06 | 4.93E+05 | 2.95E+05 | 9.87E+04 | 4.91E+04 | 0 | 0 |
| 6 | 70 | 2.42E+07 | 6.03E+07 | 7.02E+07 | 5.18E+07 | 3.04E+07 | 1.86E+07 | 9.83E+06 | 5.01E+06 | 2.44E+06 | 8.38E+05 | 1.81E+05 | 2.53E+05 | 3.62E+04 | 1.11E+05 | 0 |
| 6 | 60 | 3.10E+07 | 1.11E+08 | 1.09E+08 | 4.55E+07 | 2.39E+07 | 1.13E+07 | 4.88E+06 | 2.24E+06 | 6.00E+05 | 1.56E+05 | 1.74E+05 | 5.14E+04 | 3.50E+04 | 0 | 0 |
| 6 | 50 | 2.57E+07 | 6.50E+07 | 6.97E+07 | 5.18E+07 | 2.71E+07 | 1.38E+07 | 5.31E+06 | 2.12E+06 | 8.07E+05 | 2.37E+05 | 1.31E+05 | 5.77E+04 | 3.64E+04 | 0 | 2.43E+04 |
| 6 | 40 | 2.66E+07 | 6.30E+07 | 6.24E+07 | 4.92E+07 | 2.15E+07 | 9.37E+06 | 3.28E+06 | 1.12E+06 | 4.58E+05 | 1.57E+05 | 9.92E+04 | 1.43E+04 | 2.81E+04 | 0 | 0 |
| approach | 155623 | 155746 | | | | | | | | | | | | | | |
| 7 | 260 | 6.67E+05 | 1.53E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 250 | 1.04E+07 | 7.85E+06 | 1.98E+07 | 5.43E+07 | 2.40E+07 | 7.39E+06 | 3.23E+06 | 2.07E+06 | 6.11E+05 | 2.12E+05 | 7.05E+04 | 2.35E+04 | 0 | 2.35E+04 | 0 |
| 7 | 240 | 2.62E+07 | 2.54E+07 | 6.48E+07 | 1.56E+08 | 6.70E+07 | 2.39E+07 | 1.36E+07 | 7.11E+06 | 3.58E+06 | 1.09E+06 | 2.10E+05 | 1.04E+05 | 3.46E+04 | 0 | 0 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 230 | 2.56E+07 | 2.92E+07 | 6.61E+07 | 1.31E+08 | 5.72E+07 | 3.07E+07 | 1.95E+07 | 1.07E+07 | 4.55E+06 | 1.76E+06 | 3.49E+05 | 1.40E+05 | 0 | 3.54E+04 | 6.95E+04 |
| 7 | 220 | 2.47E+07 | 2.84E+07 | 4.09E+07 | 5.99E+07 | 2.87E+07 | 1.40E+07 | 6.84E+06 | 3.78E+06 | 1.28E+06 | 1.63E+05 | 1.17E+05 | 0 | 0 | 0 | 0 |
| 7 | 210 | 2.42E+07 | 3.35E+07 | 5.70E+07 | 8.22E+07 | 3.91E+07 | 2.11E+07 | 1.33E+07 | 6.59E+06 | 2.27E+06 | 7.90E+05 | 2.39E+05 | 2.42E+04 | 4.76E+04 | 2.42E+04 | 0 |
| 7 | 200 | 2.49E+07 | 3.59E+07 | 8.11E+07 | 1.18E+08 | 3.77E+07 | 2.42E+07 | 1.37E+07 | 6.87E+06 | 2.97E+06 | 1.27E+06 | 2.83E+05 | 1.77E+05 | 0 | 0 | 0 |
| 7 | 190 | 2.48E+07 | 3.59E+07 | 7.27E+07 | 9.56E+07 | 3.92E+07 | 2.39E+07 | 1.26E+07 | 6.15E+06 | 2.15E+06 | 9.09E+05 | 1.44E+05 | 1.20E+05 | 2.39E+04 | 0 | 0 |
| 7 | 180 | 1.79E+07 | 2.77E+07 | 4.95E+07 | 5.99E+07 | 2.81E+07 | 1.79E+07 | 9.45E+06 | 4.26E+06 | 9.31E+05 | 6.08E+05 | 3.58E+04 | 3.58E+04 | 0 | 0 | 0 |
| 7 | 170 | 2.58E+07 | 3.79E+07 | 9.32E+07 | 1.06E+08 | 4.55E+07 | 2.58E+07 | 1.29E+07 | 7.21E+06 | 2.72E+06 | 1.07E+06 | 2.86E+05 | 1.79E+05 | 1.07E+05 | 0 | 0 |
| 7 | 160 | 2.31E+07 | 3.46E+07 | 9.13E+07 | 1.09E+08 | 4.97E+07 | 2.91E+07 | 1.28E+07 | 5.07E+06 | 1.29E+06 | 4.54E+05 | 2.63E+05 | 7.17E+04 | 0 | 7.19E+04 | 0 |
| 7 | 150 | 2.45E+07 | 4.00E+07 | 1.11E+08 | 9.92E+07 | 4.99E+07 | 3.12E+07 | 1.27E+07 | 4.60E+06 | 1.57E+06 | 5.51E+05 | 1.93E+05 | 2.44E+04 | 2.43E+04 | 0 | 2.44E+04 |
| 7 | 140 | 2.06E+07 | 3.86E+07 | 9.55E+07 | 9.11E+07 | 4.77E+07 | 2.85E+07 | 1.14E+07 | 4.12E+06 | 1.40E+06 | 4.79E+05 | 2.21E+05 | 3.70E+04 | 0 | 0 | 3.70E+04 |
| 7 | 130 | 2.05E+07 | 4.47E+07 | 1.01E+08 | 8.88E+07 | 4.27E+07 | 2.38E+07 | 7.82E+06 | 2.78E+06 | 6.08E+05 | 1.22E+05 | 9.66E+04 | 0 | 2.40E+04 | 0 | 0 |
| 7 | 120 | 2.12E+07 | 4.69E+07 | 9.95E+07 | 8.00E+07 | 3.94E+07 | 2.17E+07 | 8.78E+06 | 3.58E+06 | 8.58E+05 | 2.95E+05 | 1.23E+05 | 7.35E+04 | 4.90E+04 | 0 | 0 |
| 7 | 110 | 2.05E+07 | 4.59E+07 | 9.08E+07 | 7.27E+07 | 3.60E+07 | 1.75E+07 | 5.82E+06 | 1.61E+06 | 4.73E+05 | 1.09E+05 | 3.62E+04 | 0 | 3.62E+04 | 0 | 0 |
| 7 | 100 | 2.11E+07 | 5.20E+07 | 9.85E+07 | 6.62E+07 | 2.96E+07 | 1.33E+07 | 3.94E+06 | 1.14E+06 | 3.36E+05 | 1.86E+04 | 3.73E+04 | 0 | 1.89E+04 | 0 | 0 |
| 7 | 90 | 2.94E+07 | 8.20E+07 | 1.24E+08 | 5.73E+07 | 2.49E+07 | 1.10E+07 | 2.84E+06 | 7.47E+05 | 2.24E+05 | 4.95E+04 | 2.49E+04 | 2.49E+04 | 0 | 0 | 0 |
| 7 | 80 | 1.96E+07 | 5.60E+07 | 8.44E+07 | 6.26E+07 | 3.65E+07 | 1.94E+07 | 7.30E+06 | 2.31E+06 | 8.32E+05 | 4.54E+05 | 1.51E+05 | 0 | 0 | 0 | 0 |
| 7 | 70 | 1.83E+07 | 4.36E+07 | 7.23E+07 | 6.54E+07 | 2.96E+07 | 1.25E+07 | 3.37E+06 | 1.11E+06 | 2.76E+05 | 1.00E+05 | 2.50E+04 | 0 | 0 | 0 | 0 |
| 7 | 60 | 2.04E+07 | 4.51E+07 | 6.07E+07 | 5.19E+07 | 2.35E+07 | 1.01E+07 | 3.39E+06 | 1.16E+06 | 2.03E+05 | 1.26E+05 | 2.49E+04 | 2.56E+04 | 0 | 0 | 0 |
| 7 | 50 | 2.96E+07 | 9.58E+07 | 7.06E+07 | 3.19E+07 | 9.10E+06 | 2.60E+06 | 5.34E+05 | 1.28E+05 | 1.28E+05 | 2.57E+04 | 0 | 0 | 0 | 0 | 0 |
| 7 | 40 | 1.69E+07 | 4.52E+07 | 5.53E+07 | 3.91E+07 | 1.68E+07 | 7.21E+06 | 2.12E+06 | 8.94E+05 | 1.29E+05 | 2.54E+04 | 0 | 0 | 0 | 0 | 0 |
| 7 | 30 | 3.88E+07 | 7.09E+07 | 4.46E+07 | 2.25E+07 | 7.77E+06 | 2.55E+06 | 7.82E+05 | 2.96E+05 | 1.03E+05 | 3.85E+04 | 2.61E+04 | 0 | 0 | 0 | 0 |
| 7 | 20 | 2.08E+07 | 2.51E+07 | 1.88E+07 | 1.22E+07 | 5.67E+06 | 2.39E+06 | 7.97E+05 | 3.11E+05 | 9.73E+04 | 5.84E+04 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10 | 7.23E+06 | 1.39E+07 | 1.65E+07 | 9.21E+06 | 2.57E+06 | 7.36E+05 | 2.18E+05 | 7.04E+04 | 3.74E+04 | 2.00E+04 | 6123 | 1.23E+04 | 6019 | 0 | 0 |

Vandenberg AFB, CA
August 27, 1992

| Approach Number | Altitude (m) Begin time | End time | bin 1 | bin 2 | bin 3 | bin 4 | bin 5 | bin 6 | bin 7 | bin 8 | bin 9 | bin 10 | bin 11 | bin 12 | bin 13 | bin 14 | bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number of drops (per cubic meter) | | | | | | | | | | | | | | |
| | | | Size: 20 micrometers Range: 10-310 micrometers | | | | | | | | | | | | | | |
| approach | 144804 | 144843 | | | | | | | | | | | | | | | |
| 1 | 390 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 380 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 370 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 360 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 350 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 340 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 330 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 320 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 310 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 300 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 290 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 280 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 270 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 260 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 250 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 240 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 230 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 220 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 210 | | 0 | 0 | 1322 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 200 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 190 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 180 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 170 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| approach | 145958 | 150110 | | | | | | | | | | | | | | | |
| 2 | 210 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 200 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 190 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 180 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 170 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 160 | | 2.11E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 150 | | 0 | 5505 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 140 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 130 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 120 | | 1.30E+06 | 8.82E+04 | 0 | 0 | 1029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 110 | | 3.30E+06 | 3.77E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 100 | | 3.20E+06 | 2.79E+05 | 1.56E+04 | 2057 | 0 | 0 | 400 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 90 | | 2.82E+06 | 2.80E+05 | 5225 | 1548 | 0 | 0 | 600 | 490.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 80 | | 1.81E+06 | 1.36E+05 | 3533 | 0 | 1403 | 0 | 0 | 328.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 70 | | 2.04E+06 | 1.65E+05 | 5330 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 60 | | 2.83E+06 | 2.38E+05 | 1.09E+04 | 1083 | 0 | 0 | 825.3 | 1015 | 285.3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 50 | | 1.99E+06 | 2.61E+05 | 3.51E+04 | 7641 | 1473 | 543.3 | 0 | 346.3 | 0 | 0 | 0 | 329.2 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 40 | 1.19E+06 | 1.26E+05 | 5620 | 0 | 1124 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 30 | 1.79E+06 | 3.44E+05 | 2.57E+04 | 4222 | 573.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 20 | 1.89E+06 | 4.12E+05 | 4.05E+04 | 1.23E+04 | 3279 | 679.2 | 525.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 10 | 2.12E+06 | 3.75E+05 | 3.99E+04 | 1.32E+04 | 4060 | 1854 | 131.8 | 253.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| approach | 151247 | 151343 | | | | | | | | | | | | | | |
| 3 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 190 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 180 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 170 | 1.47E+04 | 3857 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 160 | 1.77E+05 | 5775 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 150 | 3.53E+05 | 3.47E+04 | 2698 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 140 | 3.76E+05 | 1.16E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 130 | 3.11E+05 | 2.33E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 120 | 1.73E+06 | 2.15E+05 | 2.37E+04 | 3247 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 110 | 2.03E+06 | 3.04E+05 | 3.67E+04 | 5453 | 0 | 1083 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 100 | 3.18E+06 | 4.93E+05 | 4.08E+04 | 5500 | 4454 | 0 | 426.7 | 0 | 0 | 0 | 0 | 332.4 | 0 | 0 | 0 |
| 3 | 90 | 3.86E+06 | 6.70E+05 | 6.15E+04 | 1.16E+04 | 2225 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 80 | 3.90E+06 | 4.85E+05 | 5.41E+04 | 1.66E+04 | 2996 | 547 | 0 | 0 | 0 | 282.9 | 0 | 0 | 0 | 0 | 0 |
| 3 | 70 | 3.10E+06 | 6.62E+05 | 8.28E+04 | 2.45E+04 | 6778 | 1661 | 864.3 | 1059 | 597.5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 60 | 2.89E+06 | 4.70E+05 | 5.68E+04 | 2.02E+04 | 5319 | 2228 | 436.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 50 | 2.94E+06 | 6.11E+05 | 7.41E+04 | 1.80E+04 | 1.29E+04 | 5594 | 3489 | 1426 | 301.9 | 0 | 0 | 339 | 0 | 0 | 0 |
| 3 | 40 | 2.98E+06 | 4.96E+05 | 3.83E+04 | 1.81E+04 | 0 | 0 | 0 | 357.3 | 0 | 0 | 0 | 0 | 0 | 416.7 | 0 |
| 3 | 30 | 2.36E+06 | 4.43E+05 | 6.73E+04 | 1.37E+04 | 9277 | 2725 | 534 | 436.2 | 184.7 | 177.2 | 0 | 0 | 0 | 0 | 0 |
| 3 | 20 | 2.41E+06 | 4.59E+05 | 5.14E+04 | 1.93E+04 | 5249 | 1695 | 339.1 | 265.6 | 116.2 | 111.6 | 112.6 | 0 | 0 | 0 | 0 |
| approach | 152342 | 152434 | | | | | | | | | | | | | | |
| 4 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 190 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 180 | 2.20E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 170 | 2.20E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 160 | 1.54E+05 | 1.15E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 150 | 2.20E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 140 | 5.10E+05 | 3.06E+04 | 1785 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 130 | 1.52E+06 | 1.27E+05 | 8075 | 0 | 0 | 0 | 0 | 503.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 120 | 1.46E+06 | 1.79E+05 | 2.18E+04 | 3221 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 110 | 1.46E+06 | 2.46E+05 | 2.46E+04 | 4863 | 1096 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 100 | 2.27E+06 | 3.36E+05 | 2.37E+04 | 8637 | 728 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 90 | 1.27E+06 | 2.34E+05 | 1.09E+04 | 1613 | 1089 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 80 | 1.68E+06 | 1.64E+05 | 2.73E+04 | 1.46E+04 | 3276 | 801.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 70 | 2.17E+06 | 2.70E+05 | 4.10E+04 | 6475 | 4374 | 804 | 0 | 0 | 868 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 60 | 1.57E+06 | 1.92E+05 | 3.11E+04 | 7578 | 731.7 | 538 | 0 | 0 | 290.3 | 0 | 299 | 0 | 0 | 0 | 0 |
| 4 | 50 | 1.52E+06 | 2.85E+05 | 3.04E+04 | 4913 | 2213 | 813.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 40 | 1.92E+06 | 2.63E+05 | 3.17E+04 | 6598 | 2965 | 549.3 | 852.3 | 0 | 293.7 | 281.8 | 0 | 0 | 0 | 0 | 0 |
| 4 | 30 | 1.56E+06 | 2.53E+05 | 3.84E+04 | 1.89E+04 | 5242 | 1932 | 645 | 526.8 | 891.8 | 283.2 | 0 | 0 | 0 | 0 | 0 |
| 4 | 20 | 1.51E+06 | 2.35E+05 | 3.52E+04 | 9272 | 5001 | 1397 | 184.3 | 0 | 502.2 | 0 | 0 | 0 | 0 | 0 | 0 |
| approach | 153429 | 153543 | | | | | | | | | | | | | | |
| 5 | 210 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 200 | 1.91E+05 | 3853 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 190 | 8.06E+05 | 6.28E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 180 | 1.02E+06 | 7.36E+04 | 2643 | 0 | 0 | 777 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 170 | 9.36E+05 | 1.31E+05 | 7983 | 0 | 0 | 0 | 0 | 0 | 0 | 402.3 | 0 | 0 | 0 | 0 | 0 |
| 5 | 160 | 1.27E+06 | 2.23E+05 | 1.60E+04 | 1582 | 1069 | 0 | 0 | 0 | 0 | 0 | 438.1 | 0 | 0 | 0 | 0 |
| 5 | 150 | 1.75E+06 | 2.55E+05 | 4.33E+04 | 1.12E+04 | 6499 | 1596 | 623 | 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 140 | 1.81E+06 | 3.68E+05 | 3.82E+04 | 2.10E+04 | 1092 | 801 | 625 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 130 | 2.32E+06 | 4.19E+05 | 4.13E+04 | 4899 | 1101 | 1624 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 120 | 1.89E+06 | 2.86E+05 | 2.43E+04 | 8890 | 2266 | 555.3 | 0 | 705.7 | 299.8 | 285.8 | 0 | 668 | 0 | 0 | 0 |
| 5 | 110 | 1.87E+06 | 3.25E+05 | 5.02E+04 | 6788 | 3436 | 1269 | 660.5 | 0 | 681.3 | 217.3 | 233.8 | 0 | 0 | 0 | 0 |
| 5 | 100 | 1.85E+06 | 2.36E+05 | 2.03E+04 | 3441 | 1154 | 854.5 | 0 | 0 | 1381 | 0 | 0 | 519.5 | 567.5 | 0 | 0 |
| 5 | 90 | 1.86E+06 | 3.08E+05 | 2.53E+04 | 6908 | 1561 | 0 | 0 | 0 | 1239 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 80 | 1.82E+06 | 1.82E+05 | 3.48E+04 | 2291 | 2311 | 571.3 | 1327 | 0 | 305.7 | 0 | 315.8 | 344.3 | 0 | 0 | 0 |
| 5 | 70 | 1.79E+06 | 2.61E+05 | 1.77E+04 | 1.16E+04 | 2358 | 0 | 452.3 | 736 | 623.1 | 0 | 323 | 0 | 0 | 0 | 0 |
| 5 | 60 | 1.65E+06 | 3.04E+05 | 2.59E+04 | 7083 | 1599 | 0 | 0 | 0 | 318.5 | 301.3 | 326.5 | 0 | 0 | 0 | 0 |
| 5 | 50 | 1.64E+06 | 2.03E+05 | 5.45E+04 | 1.55E+04 | 811.7 | 1189 | 0 | 0 | 322.1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 40 | 1.59E+06 | 3.20E+05 | 4.26E+04 | 7195 | 3640 | 897 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 30 | 1.65E+06 | 2.64E+05 | 3.70E+04 | 7296 | 3087 | 1815 | 355.5 | 0 | 244 | 0 | 0 | 0 | 0 | 0 | 378 |
| 5 | 20 | 1.55E+06 | 2.10E+05 | 2.60E+04 | 7253 | 2443 | 1347 | 353 | 0 | 242.4 | 0 | 250.2 | 0 | 0 | 0 | 0 |
| 5 | 10 | 9.57E+05 | 1.98E+05 | 4.78E+04 | 1.57E+04 | 6598 | 3149 | 1363 | 527.5 | 228.1 | 78.82 | 48.59 | 0 | 0 | 0 | 0 |
| approach | 154535 | 154635 | | | | | | | | | | | | | | |
| 6 | 240 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 230 | 4.49E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 220 | 6.42E+05 | 7.82E+04 | 5610 | 1661 | 0 | 0 | 0 | 0 | 0 | 424.5 | 0 | 0 | 0 | 0 | 0 |
| 6 | 210 | 8.33E+05 | 1.14E+05 | 1.69E+04 | 1661 | 563 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 200 | 1.30E+06 | 1.68E+05 | 1.21E+04 | 4565 | 443.4 | 0 | 0 | 205.8 | 0 | 168.7 | 0 | 0 | 0 | 0 | 0 |
| 6 | 190 | 1.57E+06 | 2.07E+05 | 1.87E+04 | 6616 | 748.3 | 0 | 0 | 0 | 297 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 180 | 1.62E+06 | 2.92E+05 | 4.53E+04 | 2.35E+04 | 2267 | 0 | 1301 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 170 | 1.79E+06 | 2.92E+05 | 4.39E+04 | 1.81E+04 | 2532 | 654.9 | 868.7 | 118.9 | 503.3 | 143.8 | 52.04 | 0 | 62.39 | 0 | 0 |
| 6 | 160 | 1.95E+06 | 2.92E+05 | 4.25E+04 | 1.28E+04 | 2797 | 1310 | 436.4 | 237.8 | 1007 | 287.6 | 104.1 | 0 | 124.8 | 0 | 0 |
| 6 | 150 | 1.79E+06 | 3.05E+05 | 4.12E+04 | 1.15E+04 | 2538 | 1493 | 872.2 | 1187 | 955.5 | 143.8 | 52.04 | 0 | 62.39 | 0 | 0 |
| 6 | 140 | 1.63E+06 | 3.17E+05 | 3.99E+04 | 1.01E+04 | 2279 | 1676 | 1308 | 2137 | 904.4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 130 | 1.16E+06 | 1.70E+05 | 1.13E+04 | 3353 | 2265 | 0 | 0 | 0 | 898.8 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 120 | 1.28E+06 | 1.28E+05 | 1.71E+04 | 1688 | 2265 | 0 | 654.5 | 534.5 | 0 | 0 | 467.3 | 0 | 0 | 0 | 0 |
| 6 | 110 | 1.69E+06 | 2.92E+05 | 4.87E+04 | 1.95E+04 | 8023 | 2527 | 1316 | 268.7 | 454.8 | 650 | 234.4 | 0 | 0 | 0 | 0 |
| 6 | 100 | 1.28E+06 | 2.63E+05 | 5.42E+04 | 1.35E+04 | 5704 | 5032 | 1308 | 534 | 452.2 | 431.1 | 0 | 0 | 0 | 0 | 0 |
| 6 | 90 | 1.22E+06 | 3.12E+05 | 3.03E+04 | 4475 | 6051 | 1673 | 0 | 356.3 | 0 | 575 | 0 | 0 | 0 | 0 | 0 |
| 6 | 80 | 1.20E+06 | 2.73E+05 | 2.47E+04 | 1.01E+04 | 2285 | 3350 | 1747 | 0 | 302.2 | 288.2 | 0 | 0 | 0 | 0 | 0 |
| 6 | 70 | 1.68E+06 | 2.88E+05 | 6.29E+04 | 1.02E+04 | 5711 | 2518 | 1307 | 1075 | 0 | 433.8 | 469.9 | 0 | 0 | 0 | 0 |
| 6 | 60 | 1.19E+06 | 2.79E+05 | 4.90E+04 | 2.55E+04 | 9860 | 2318 | 1886 | 2075 | 199.7 | 405.9 | 0 | 225 | 0 | 0 | 0 |
| 6 | 50 | 9.02E+05 | 2.40E+05 | 4.69E+04 | 2.75E+04 | 8840 | 3835 | 2536 | 2060 | 0 | 130.9 | 0 | 0 | 369 | 0 | 0 |
| 6 | 40 | 7.02E+05 | 1.68E+05 | 3.53E+04 | 1.17E+04 | 2591 | 961.2 | 254.6 | 837.2 | 171.4 | 0 | 0 | 0 | 0 | 0 | 0 |
| approach | 155623 | 155746 | | | | | | | | | | | | | | |
| 7 | 260 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 250 | 2.77E+05 | 6.48E+04 | 3557 | 1053 | 711.3 | 523 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 240 | 1.15E+06 | 2.03E+05 | 1.62E+04 | 7980 | 1072 | 0 | 0 | 510 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 230 | 1.58E+06 | 1.84E+05 | 1.88E+04 | 3184 | 4302 | 788.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 220 | 5.92E+05 | 2.71E+04 | 0 | 0 | 0 | 0 | 830.7 | 1018 | 287.2 | 273.8 | 0 | 322.8 | 0 | 0 | 0 |
| 7 | 210 | 9.70E+05 | 9.39E+04 | 3638 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 200 | 1.19E+06 | 1.30E+05 | 2.76E+04 | 4888 | 0 | 813 | 0 | 0 | 0 | 415.5 | 0 | 0 | 0 | 0 | 0 |
| 7 | 190 | 1.12E+06 | 1.11E+05 | 1.30E+04 | 1093 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 330.2 | 0 | 0 | 0 |
| 7 | 180 | 7.73E+05 | 5.96E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 170 | 2.08E+06 | 3.70E+05 | 3.62E+04 | 1651 | 1115 | 0 | 0 | 0 | 884.8 | 844 | 0 | 0 | 0 | 0 | 0 |
| 7 | 160 | 1.39E+06 | 2.23E+05 | 4.66E+04 | 8821 | 4463 | 550 | 0 | 1045 | 589.7 | 281.1 | 0 | 0 | 0 | 0 | 0 |
| 7 | 150 | 9.42E+05 | 2.67E+05 | 3.98E+04 | 2.35E+04 | 9813 | 6115 | 864.3 | 353 | 1195 | 569.7 | 312.1 | 0 | 0 | 0 | 0 |
| 7 | 140 | 1.40E+06 | 2.50E+05 | 3.70E+04 | 1.35E+04 | 2285 | 835 | 652 | 535.5 | 904 | 429.6 | 465.4 | 507.5 | 0 | 0 | 0 |
| 7 | 130 | 1.39E+06 | 3.10E+05 | 6.28E+04 | 2.14E+04 | 6852 | 2797 | 1744 | 1068 | 605 | 866 | 622.7 | 0 | 0 | 0 | 0 |
| 7 | 120 | 1.07E+06 | 2.31E+05 | 4.24E+04 | 1.25E+04 | 4627 | 1129 | 891.7 | 359.7 | 1226 | 0 | 318.3 | 343.3 | 0 | 419.3 | 0 |
| 7 | 110 | 9.98E+05 | 1.24E+05 | 5808 | 5159 | 0 | 0 | 0 | 544.5 | 460.9 | 0 | 1428 | 0 | 0 | 0 | 0 |
| 7 | 100 | 7.80E+05 | 1.16E+05 | 1.62E+04 | 5214 | 1174 | 0 | 675.2 | 824.7 | 465.9 | 221.3 | 0 | 0 | 288.7 | 0 | 0 |
| 7 | 90 | 9.63E+05 | 2.48E+05 | 2.36E+04 | 1.51E+04 | 5490 | 1727 | 451.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 80 | 1.22E+06 | 2.23E+05 | 2.97E+04 | 8824 | 3555 | 3505 | 680.5 | 0 | 947.5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 70 | 1.19E+06 | 2.17E+05 | 3.57E+04 | 8227 | 1584 | 2913 | 912.3 | 373 | 944.6 | 600.3 | 0 | 0 | 0 | 0 | 0 |
| 7 | 60 | 9.19E+05 | 1.52E+05 | 2.17E+04 | 3501 | 788.3 | 579.7 | 0 | 0 | 625.7 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 50 | 7.84E+05 | 1.07E+05 | 9993 | 3548 | 801.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 40 | 7.91E+05 | 1.68E+05 | 2.21E+04 | 8344 | 3218 | 1775 | 1847 | 377 | 0 | 304.4 | 0 | 0 | 0 | 0 | 0 |
| 7 | 30 | 5.07E+05 | 1.33E+05 | 1.93E+04 | 7223 | 1220 | 1495 | 1167 | 191.5 | 483.3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 20 | 3.11E+05 | 1.04E+05 | 2.13E+04 | 1.08E+04 | 3648 | 1797 | 1392 | 283.2 | 243.4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10 | 5.02E+05 | 1.08E+05 | 1.47E+04 | 5256 | 2088 | 851.2 | 935.1 | 194.6 | 304.1 | 0 | 0 | 0 | 0 | 0 | 0 |

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| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| | 145958 | 150110 | | | | | | |
| 2 | 210 | | 18.5 | 15.84 | 2 | 0.00 | 2.60 | 000.995 |
| 2 | 200 | | 18.1 | 15.47 | 2 | 0.00 | 6.28 | 001.384 |
| 2 | 190 | | 18.1 | 15.47 | 2 | 0.00 | 3.05 | 034.929 |
| 2 | 180 | | 18.1 | 15.47 | 2 | 0.06 | 3.59 | 290.279 |
| 2 | 170 | | 17.2 | 14.66 | 2 | 0.06 | 4.01 | 219.441 |
| 2 | 160 | | 17.2 | 14.66 | 2 | 0.13 | 3.93 | 466.022 |
| 2 | 150 | | 17.2 | 14.66 | 2 | 0.10 | 4.23 | 329.471 |
| 2 | 140 | | 16.7 | 14.20 | 3 | 0.08 | 4.27 | 232.961 |
| 2 | 130 | | 16.4 | 13.97 | 2 | 0.02 | 4.53 | 060.410 |
| 2 | 120 | | 16.4 | 13.97 | 2 | 0.63 | 11.04 | 188.730 |
| 2 | 110 | | 16.4 | 13.97 | 1 | 0.73 | 11.00 | 225.146 |
| 2 | 100 | | 15.6 | 13.31 | 3 | 0.76 | 11.13 | 223.102 |
| 2 | 90 | | 15.6 | 13.31 | 2 | 0.66 | 11.14 | 197.952 |
| 2 | 80 | | 15.3 | 13.07 | 3 | 0.41 | 10.62 | 166.253 |
| 2 | 70 | | 14.7 | 12.60 | 2 | 0.27 | 9.67 | 157.298 |
| 2 | 60 | | 14.7 | 12.60 | 3 | 0.37 | 10.81 | 162.387 |
| 2 | 50 | | 14.7 | 12.60 | 3 | 0.17 | 8.69 | 164.949 |
| 2 | 40 | | 13.9 | 12.00 | 2 | 0.09 | 8.02 | 106.717 |
| 2 | 30 | | 13.9 | 12.00 | 4 | 0.10 | 7.77 | 123.525 |
| 2 | 20 | | 13.7 | 11.87 | 5 | 0.06 | 6.19 | 104.416 |
| 2 | 10 | | 12.9 | 11.31 | 24 | 0.13 | 11.28 | 061.340 |
| | 151247 | 151343 | | | | | | |
| 3 | 200 | | 17.2 | 14.66 | 1 | 0.00 | 3.04 | 002.009 |
| 3 | 190 | | 17.5 | 14.92 | 3 | 0.07 | 4.46 | 176.709 |
| 3 | 180 | | 17.2 | 14.66 | 2 | 0.11 | 3.86 | 386.508 |
| 3 | 170 | | 16.9 | 14.43 | 3 | 0.07 | 4.24 | 242.181 |
| 3 | 160 | | 16.4 | 13.97 | 2 | 0.13 | 4.84 | 279.135 |
| 3 | 150 | | 16.4 | 13.97 | 2 | 0.12 | 5.71 | 235.122 |
| 3 | 140 | | 16 | 13.64 | 2 | 0.17 | 7.63 | 208.253 |
| 3 | 130 | | 15.6 | 13.31 | 3 | 0.13 | 8.73 | 104.369 |
| 3 | 120 | | 15.6 | 13.31 | 3 | 0.24 | 7.08 | 259.695 |
| 3 | 110 | | 15 | 12.84 | 3 | 0.24 | 7.64 | 261.948 |
| 3 | 100 | | 14.7 | 12.60 | 3 | 0.31 | 8.91 | 283.772 |
| 3 | 90 | | 14.7 | 12.60 | 2 | 0.22 | 7.98 | 221.198 |
| 3 | 80 | | 14.2 | 12.20 | 3 | 0.30 | 9.83 | 215.375 |
| 3 | 70 | | 13.9 | 12.00 | 3 | 0.23 | 7.23 | 345.081 |
| 3 | 60 | | 13.9 | 12.00 | 3 | 0.18 | 8.00 | 214.575 |
| 3 | 50 | | 13.6 | 11.78 | 3 | 0.17 | 7.79 | 240.887 |
| 3 | 40 | | 13 | 11.35 | 3 | 0.16 | 8.38 | 160.479 |
| 3 | 30 | | 13 | 11.35 | 5 | 0.11 | 7.48 | 161.295 |
| 3 | 20 | | 12.6 | 11.07 | 8 | 0.09 | 7.16 | 130.961 |
| | 152342 | 152434 | | | | | | |
| 4 | 200 | | 18.1 | 15.47 | 2 | 0.00 | 2.86 | 002.236 |

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| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 4 | 190 | | 17.8 | 15.19 | 3 | 0.02 | 4.52 | 050.036 |
| 4 | 180 | | 17.2 | 14.66 | 2 | 0.12 | 5.80 | 180.167 |
| 4 | 170 | | 17.2 | 14.66 | 2 | 0.19 | 7.59 | 185.177 |
| 4 | 160 | | 17.2 | 14.66 | 2 | 0.17 | 7.71 | 172.921 |
| 4 | 150 | | 16.4 | 13.97 | 2 | 0.07 | 6.65 | 079.506 |
| 4 | 140 | | 16.4 | 13.97 | 3 | 0.19 | 9.45 | 133.684 |
| 4 | 130 | | 16 | 13.64 | 2 | 0.54 | 9.76 | 225.429 |
| 4 | 120 | | 15.6 | 13.31 | 3 | 0.36 | 9.27 | 207.200 |
| 4 | 110 | | 15.6 | 13.31 | 2 | 0.40 | 9.75 | 233.906 |
| 4 | 100 | | 15.3 | 13.07 | 3 | 0.37 | 9.51 | 280.077 |
| 4 | 90 | | 14.7 | 12.60 | 2 | 0.31 | 8.84 | 200.725 |
| 4 | 80 | | 14.7 | 12.60 | 2 | 0.32 | 9.11 | 213.900 |
| 4 | 70 | | 14.7 | 12.60 | 2 | 0.38 | 10.09 | 229.791 |
| 4 | 60 | | 14.4 | 12.40 | 3 | 0.33 | 9.33 | 183.611 |
| 4 | 50 | | 13.9 | 12.00 | 2 | 0.21 | 8.47 | 190.322 |
| 4 | 40 | | 13.9 | 12.00 | 3 | 0.18 | 8.44 | 184.193 |
| 4 | 30 | | 13.7 | 11.89 | 6 | 0.24 | 9.61 | 216.526 |
| 4 | 20 | | 12.9 | 11.27 | 7 | 0.15 | 8.73 | 146.387 |
| | 153429 | 153543 | | | | | | |
| 5 | 210 | | 18.1 | 15.47 | 2 | 0.00 | 7.24 | 002.662 |
| 5 | 200 | | 18.1 | 15.47 | 3 | 0.09 | 9.86 | 064.756 |
| 5 | 190 | | 17.2 | 14.66 | 2 | 0.47 | 10.15 | 176.129 |
| 5 | 180 | | 17.2 | 14.66 | 2 | 0.60 | 9.84 | 217.666 |
| 5 | 170 | | 16.8 | 14.31 | 2 | 0.55 | 9.62 | 219.405 |
| 5 | 160 | | 16.4 | 13.97 | 2 | 0.73 | 9.44 | 271.739 |
| 5 | 150 | | 16.4 | 13.97 | 2 | 0.59 | 9.18 | 297.521 |
| 5 | 140 | | 16.4 | 13.97 | 2 | 0.46 | 8.50 | 299.314 |
| 5 | 130 | | 15.6 | 13.31 | 2 | 0.33 | 7.21 | 305.667 |
| 5 | 120 | | 15.6 | 13.31 | 3 | 0.36 | 8.15 | 256.024 |
| 5 | 110 | | 15.6 | 13.31 | 4 | 0.33 | 7.72 | 300.483 |
| 5 | 100 | | 14.7 | 12.60 | 2 | 0.31 | 7.75 | 247.808 |
| 5 | 90 | | 14.7 | 12.60 | 3 | 0.22 | 6.82 | 265.937 |
| 5 | 80 | | 14.4 | 12.40 | 3 | 0.24 | 7.44 | 210.706 |
| 5 | 70 | | 13.9 | 12.00 | 3 | 0.20 | 6.88 | 212.764 |
| 5 | 60 | | 13.9 | 12.00 | 3 | 0.17 | 6.56 | 217.928 |
| 5 | 50 | | 13.9 | 12.00 | 3 | 0.12 | 5.97 | 174.743 |
| 5 | 40 | | 13.4 | 11.67 | 2 | 0.10 | 5.69 | 180.116 |
| 5 | 30 | | 13 | 11.35 | 4 | 0.08 | 5.34 | 195.761 |
| 5 | 20 | | 13 | 11.35 | 4 | 0.07 | 5.84 | 121.014 |
| 5 | 10 | | 12.3 | 10.85 | 22 | 0.07 | 9.52 | 066.131 |
| | 154535 | 154635 | | | | | | |
| 6 | 240 | | 19.3 | 16.65 | 2 | 0.00 | 3.29 | 001.039 |
| 6 | 230 | | 18.9 | 16.22 | 2 | 0.03 | 9.93 | 020.723 |
| 6 | 220 | | 18 | 15.42 | 2 | 0.21 | 7.91 | 154.938 |

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| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 6 | 210 | | 18 | 15.42 | 4 | 0.26 | 8.51 | 190.307 |
| 6 | 200 | | 17.9 | 15.30 | 5 | 0.40 | 8.81 | 220.436 |
| 6 | 190 | | 17.5 | 14.92 | 3 | 0.51 | 8.97 | 270.415 |
| 6 | 180 | | 17.2 | 14.66 | 1 | 0.48 | 7.25 | 381.060 |
| 6 | 170 | | 16.8 | 14.28 | 0 | 0.45 | 7.49 | 362.261 |
| 6 | 160 | | 16.3 | 13.90 | 9 | 0.43 | 7.77 | 343.462 |
| 6 | 150 | | 16 | 13.61 | 0 | 0.40 | 7.69 | 328.176 |
| 6 | 140 | | 15.6 | 13.31 | 1 | 0.36 | 7.61 | 312.955 |
| 6 | 130 | | 15.6 | 13.31 | 1 | 0.24 | 7.22 | 227.667 |
| 6 | 120 | | 15.6 | 13.31 | 2 | 0.28 | 8.03 | 204.980 |
| 6 | 110 | | 14.9 | 12.78 | 4 | 0.35 | 7.61 | 318.931 |
| 6 | 100 | | 14.7 | 12.60 | 2 | 0.36 | 7.18 | 413.280 |
| 6 | 90 | | 14.4 | 12.40 | 3 | 0.35 | 7.56 | 361.198 |
| 6 | 80 | | 13.9 | 12.00 | 3 | 0.35 | 8.21 | 259.247 |
| 6 | 70 | | 13.9 | 12.00 | 2 | 0.38 | 8.68 | 274.224 |
| 6 | 60 | | 13.5 | 11.69 | 4 | 0.28 | 7.22 | 339.791 |
| 6 | 50 | | 12.9 | 11.27 | 6 | 0.29 | 7.67 | 261.939 |
| 6 | 40 | | 13 | 11.35 | 5 | 0.21 | 6.85 | 237.311 |
| | 155623 | 155746 | | | | | | |
| 7 | 260 | | 19.8 | 17.10 | 2 | 0.00 | 1.99 | 000.820 |
| 7 | 250 | | 19.8 | 17.10 | 3 | 0.18 | 7.09 | 129.996 |
| 7 | 240 | | 18.9 | 16.22 | 2 | 0.60 | 7.46 | 389.285 |
| 7 | 230 | | 18.9 | 16.22 | 2 | 0.66 | 8.50 | 377.361 |
| 7 | 220 | | 18.9 | 16.22 | 3 | 0.28 | 7.71 | 208.711 |
| 7 | 210 | | 18.1 | 15.47 | 3 | 0.43 | 8.21 | 280.416 |
| 7 | 200 | | 18.1 | 15.47 | 2 | 0.51 | 8.09 | 346.769 |
| 7 | 190 | | 17.2 | 14.66 | 3 | 0.45 | 8.01 | 314.079 |
| 7 | 180 | | 17.2 | 14.66 | 2 | 0.31 | 7.99 | 216.363 |
| 7 | 170 | | 16.8 | 14.31 | 2 | 0.52 | 8.04 | 359.113 |
| 7 | 160 | | 16.4 | 13.97 | 3 | 0.50 | 7.70 | 357.019 |
| 7 | 150 | | 16.1 | 13.75 | 3 | 0.52 | 7.84 | 376.000 |
| 7 | 140 | | 15.6 | 13.31 | 2 | 0.47 | 7.77 | 339.698 |
| 7 | 130 | | 15.6 | 13.31 | 3 | 0.41 | 7.37 | 332.951 |
| 7 | 120 | | 15 | 12.84 | 3 | 0.40 | 7.56 | 322.513 |
| 7 | 110 | | 14.7 | 12.60 | 2 | 0.31 | 7.00 | 291.363 |
| 7 | 100 | | 14.7 | 12.60 | 4 | 0.27 | 6.62 | 286.209 |
| 7 | 90 | | 14.2 | 12.20 | 3 | 0.25 | 6.19 | 331.975 |
| 7 | 80 | | 13.9 | 12.00 | 2 | 0.34 | 7.45 | 289.608 |
| 7 | 70 | | 13.9 | 12.00 | 3 | 0.25 | 6.79 | 246.533 |
| 7 | 60 | | 13.9 | 12.00 | 3 | 0.21 | 6.74 | 216.654 |
| 7 | 50 | | 13.3 | 11.57 | 3 | 0.11 | 5.23 | 240.442 |
| 7 | 40 | | 13 | 11.35 | 3 | 0.16 | 6.65 | 183.617 |
| 7 | 30 | | 13 | 11.35 | 6 | 0.10 | 5.85 | 188.338 |
| 7 | 20 | | 13 | 11.35 | 0.01 | 0.06 | 7.24 | 086.281 |
| 7 | 10 | | 12.5 | 11.01 | 0.01 | 0.04 | 6.18 | 050.520 |

## Arcata, CA

August 28, 1992

Number per cubic meter

Size: 3 microns Range: 2-47 microns

| Approach number | Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 152008 | 152048 | | | | | | | | | | | | | | | |
| 1 | 110 | | 9.36E+06 | 1.45E+07 | 3.80E+07 | 4.61E+07 | 6.21E+06 | 1.18E+06 | 2.86E+05 | 3.55E+05 | 3.52E+04 | 3.57E+04 | 1.76E+04 | 0 | 0 | 0 | 0 |
| 1 | 100 | | 2.14E+07 | 3.40E+07 | 8.96E+07 | 1.05E+08 | 1.17E+07 | 2.62E+06 | 6.12E+05 | 5.06E+05 | 1.80E+05 | 7.28E+04 | 1.07E+05 | 3.58E+04 | 0 | 0 | 0 |
| 1 | 90 | | 1.02E+07 | 1.72E+07 | 3.53E+07 | 5.70E+07 | 1.54E+07 | 3.37E+06 | 1.30E+06 | 7.28E+05 | 3.06E+05 | 3.45E+05 | 1.14E+05 | 0 | 0 | 0 | 0 |
| 1 | 80 | | 1.68E+07 | 3.07E+07 | 7.31E+07 | 8.82E+07 | 1.55E+07 | 2.88E+06 | 1.88E+06 | 1.01E+06 | 4.50E+05 | 2.58E+05 | 1.49E+05 | 3.64E+04 | 0 | 0 | 0 |
| 1 | 70 | | 1.65E+07 | 3.32E+07 | 7.04E+07 | 5.96E+07 | 9.40E+06 | 1.95E+06 | 7.55E+05 | 5.75E+05 | 4.32E+05 | 1.45E+05 | 3.69E+04 | 3.58E+04 | 0 | 0 | 0 |
| 1 | 60 | | 2.07E+07 | 5.29E+07 | 1.02E+08 | 5.57E+07 | 7.28E+06 | 1.17E+06 | 3.66E+05 | 2.19E+05 | 7.32E+04 | 7.32E+04 | 3.62E+04 | 0 | 0 | 0 | 0 |
| 1 | 50 | | 2.10E+07 | 5.30E+07 | 7.43E+07 | 2.49E+07 | 1.71E+06 | 6.69E+05 | 1.11E+05 | 1.49E+05 | 7.46E+04 | 3.73E+04 | 0 | 0 | 3.73E+04 | 0 | 0 |
| 1 | 40 | | 3.25E+07 | 1.09E+08 | 8.90E+07 | 1.85E+07 | 1.99E+06 | 2.73E+05 | 2.23E+05 | 7.43E+04 | 1.50E+05 | 7.45E+04 | 0 | 4.99E+04 | 0 | 0 | 0 |
| 1 | 30 | | 3.27E+07 | 7.89E+07 | 5.48E+07 | 1.85E+07 | 2.92E+06 | 5.37E+05 | 4.10E+05 | 2.57E+05 | 7.72E+04 | 1.54E+05 | 5.16E+04 | 0 | 0 | 0 | 0 |
| 1 | 20 | | 2.28E+07 | 3.89E+07 | 3.79E+07 | 1.83E+07 | 2.85E+06 | 6.80E+05 | 4.15E+05 | 1.69E+05 | 2.01E+05 | 1.22E+05 | 0 | 0 | 0 | 0 | 0 |
| 1 | 10 | | 5.96E+06 | 1.14E+07 | 1.06E+07 | 3.41E+06 | 2.50E+06 | 2.54E+06 | 2.35E+06 | 1.50E+06 | 9.52E+05 | 3.70E+05 | 3.41E+05 | 1.62E+05 | 8.05E+04 | 2.53E+04 | 1.22E+04 |
| | 153634 | 153711 | | | | | | | | | | | | | | | |
| 2 | 110 | | 7.42E+05 | 3.71E+05 | 9.27E+04 | 0 | 0 | 9.27E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 100 | | 8.68E+06 | 1.06E+07 | 5.13E+06 | 3.71E+06 | 8.94E+05 | 4.93E+05 | 2.28E+05 | 7.59E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 90 | | 1.00E+07 | 1.80E+07 | 3.89E+07 | 3.14E+07 | 4.76E+06 | 9.73E+05 | 1.13E+05 | 1.49E+05 | 3.76E+04 | 7.53E+04 | 0 | 0 | 0 | 0 | 0 |
| 2 | 80 | | 1.18E+07 | 2.27E+07 | 5.01E+07 | 2.96E+07 | 2.65E+06 | 8.49E+05 | 3.25E+05 | 2.76E+05 | 2.25E+05 | 4.98E+04 | 5.03E+04 | 0 | 0 | 0 | 0 |
| 2 | 70 | | 1.84E+07 | 4.00E+07 | 9.99E+07 | 5.12E+07 | 5.70E+06 | 7.99E+05 | 2.18E+05 | 2.55E+05 | 2.91E+05 | 7.27E+04 | 1.09E+05 | 3.63E+04 | 0 | 0 | 0 |
| 2 | 60 | | 2.10E+07 | 6.02E+07 | 1.02E+08 | 4.30E+07 | 6.93E+06 | 1.65E+06 | 5.72E+05 | 4.29E+05 | 3.10E+05 | 1.43E+05 | 4.81E+04 | 4.77E+04 | 0 | 0 | 2.39E+04 |
| 2 | 50 | | 1.77E+07 | 5.69E+07 | 8.09E+07 | 2.45E+07 | 4.20E+06 | 1.39E+06 | 4.38E+05 | 1.83E+05 | 1.83E+05 | 1.47E+05 | 7.30E+04 | 0 | 3.66E+04 | 0 | 0 |
| 2 | 40 | | 2.96E+07 | 1.12E+08 | 1.08E+08 | 2.40E+07 | 5.28E+06 | 1.54E+06 | 9.39E+05 | 6.75E+05 | 5.06E+05 | 2.17E+05 | 2.41E+05 | 9.64E+04 | 2.42E+04 | 2.42E+04 | 0 |
| 2 | 30 | | 2.12E+07 | 6.28E+07 | 5.67E+07 | 1.82E+07 | 4.16E+06 | 9.57E+05 | 4.18E+05 | 3.19E+05 | 3.20E+05 | 2.94E+05 | 4.89E+04 | 2.46E+04 | 2.46E+04 | 0 | 0 |
| 2 | 20 | | 3.38E+07 | 4.46E+07 | 2.71E+07 | 1.28E+07 | 2.11E+06 | 8.64E+05 | 3.06E+05 | 3.04E+05 | 2.55E+05 | 7.48E+04 | 5.07E+04 | 2.58E+04 | 0 | 0 | 0 |
| 2 | 10 | | 5.62E+06 | 1.15E+07 | 9.53E+06 | 3.90E+06 | 2.83E+06 | 2.71E+06 | 2.86E+06 | 2.69E+06 | 1.86E+06 | 6.35E+05 | 3.22E+05 | 1.80E+05 | 6.28E+04 | 4.34E+04 | 6353 |
| | 154746 | 154826 | | | | | | | | | | | | | | | |
| 3 | 200 | | 9.07E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 190 | | 1.98E+06 | 2.86E+06 | 4.98E+06 | 3.88E+06 | 5.87E+05 | 2.17E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 180 | | 1.06E+07 | 1.32E+07 | 3.24E+07 | 8.05E+07 | 2.51E+07 | 3.56E+06 | 4.60E+05 | 1.53E+05 | 3.86E+04 | 7.73E+04 | 3.81E+04 | 3.86E+04 | 3.81E+04 | 0 | 0 |
| 3 | 170 | | 1.33E+07 | 1.83E+07 | 5.35E+07 | 1.24E+08 | 3.58E+07 | 5.32E+06 | 8.47E+05 | 7.71E+04 | 0 | 3.84E+04 | 7.71E+04 | 3.84E+04 | 0 | 0 | 0 |
| 3 | 160 | | 2.02E+07 | 3.14E+07 | 9.51E+07 | 1.30E+08 | 2.23E+07 | 3.97E+06 | 6.39E+05 | 1.34E+05 | 1.33E+05 | 3.81E+04 | 3.81E+04 | 2.89E+04 | 0 | 9355 | 0 |
| 3 | 150 | | 2.07E+07 | 3.62E+07 | 1.01E+08 | 1.12E+08 | 1.74E+07 | 3.14E+06 | 4.61E+05 | 1.06E+05 | 1.05E+05 | 7.07E+04 | 6.99E+04 | 1.45E+04 | 0 | 4677 | 0 |
| 3 | 140 | | 2.12E+07 | 4.10E+07 | 1.07E+08 | 9.39E+07 | 1.25E+07 | 2.32E+06 | 2.82E+05 | 7.79E+04 | 7.71E+04 | 1.03E+05 | 1.02E+05 | 0 | 0 | 0 | 0 |
| 3 | 130 | | 2.38E+07 | 5.05E+07 | 1.11E+08 | 6.45E+07 | 6.90E+06 | 1.18E+06 | 1.97E+05 | 0 | 7.91E+04 | 3.94E+04 | 3.94E+04 | 0 | 0 | 0 | 0 |
| 3 | 120 | | 2.22E+07 | 4.94E+07 | 1.11E+08 | 7.56E+07 | 8.27E+06 | 1.46E+06 | 2.33E+05 | 1.15E+05 | 7.74E+04 | 3.82E+04 | 1.16E+05 | 0 | 7.65E+04 | 0 | 0 |
| 3 | 110 | | 2.38E+07 | 5.00E+07 | 1.13E+08 | 6.75E+07 | 6.76E+06 | 1.65E+06 | 2.35E+05 | 1.18E+05 | 0 | 7.81E+04 | 7.86E+04 | 3.90E+04 | 3.90E+04 | 0 | 0 |
| 3 | 100 | | 2.46E+07 | 5.87E+07 | 1.04E+08 | 3.04E+07 | 2.65E+06 | 2.40E+05 | 8.00E+04 | 0 | 0 | 3.93E+04 | 0 | 0 | 0 | 0 | 0 |
| 3 | 90 | | 2.19E+07 | 5.54E+07 | 9.20E+07 | 3.46E+07 | 3.26E+06 | 2.35E+05 | 3.95E+04 | 1.17E+05 | 1.18E+05 | 7.80E+04 | 7.85E+04 | 0 | 0 | 0 | 0 |
| 3 | 80 | | 2.14E+07 | 5.56E+07 | 9.71E+07 | 3.50E+07 | 3.56E+06 | 5.53E+05 | 1.58E+05 | 2.37E+05 | 7.90E+04 | 7.90E+04 | 0 | 0 | 0 | 0 | 0 |
| 3 | 70 | | 2.60E+07 | 7.14E+07 | 7.86E+07 | 1.14E+07 | 1.18E+06 | 1.22E+05 | 4.07E+04 | 4.07E+04 | 4.07E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 60 | | 2.55E+07 | 8.16E+07 | 1.01E+08 | 1.23E+07 | 1.49E+06 | 1.21E+05 | 8.08E+04 | 0 | 0 | 4.04E+04 | 4.04E+04 | 0 | 3.98E+04 | 0 | 0 |
| 3 | 50 | | 2.46E+07 | 9.10E+07 | 9.96E+07 | 1.54E+07 | 1.44E+06 | 8.03E+04 | 3.98E+04 | 3.98E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 40 | | 3.09E+07 | 9.05E+07 | 8.64E+07 | 1.96E+07 | 2.71E+06 | 3.97E+05 | 1.15E+05 | 9.47E+04 | 1.16E+05 | 0 | 0 | 0 | 0 | 0 | 1.93E+04 |
| | 155924 | 160016 | | | | | | | | | | | | | | | |
| 4 | 200 | | 4.37E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 190 | | 2.24E+07 | 3.50E+07 | 1.55E+07 | 1.66E+07 | 1.03E+07 | 2.89E+06 | 4.56E+05 | 5.04E+04 | 2.51E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 180 | | 1.62E+07 | 1.91E+07 | 5.46E+07 | 1.35E+08 | 5.91E+07 | 1.36E+07 | 3.18E+06 | 5.25E+05 | 1.86E+05 | 1.49E+05 | 1.14E+05 | 3.79E+04 | 0 | 0 | 0 |
| 4 | 170 | | 1.51E+07 | 1.91E+07 | 5.21E+07 | 1.16E+08 | 4.18E+07 | 9.93E+06 | 2.04E+06 | 2.26E+05 | 7.57E+04 | 7.51E+04 | 5.07E+04 | 0 | 0 | 0 | 0 |
| 4 | 160 | | 1.56E+07 | 2.17E+07 | 6.88E+07 | 1.41E+08 | 3.95E+07 | 1.03E+07 | 1.81E+06 | 4.15E+05 | 2.26E+05 | 1.13E+05 | 0 | 0 | 0 | 0 | 0 |

# Arcata, CA

August 28, 1992

| Approach number | Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number per cubic meter | | | | | | | | | | | | | | |
| 4 | 150 | | 1.06E+07 | 1.57E+07 | 4.84E+07 | 9.41E+07 | 2.66E+07 | 6.21E+06 | 1.07E+06 | 2.55E+05 | 5.08E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 140 | | 9.22E+06 | 1.55E+07 | 4.11E+07 | 7.37E+07 | 2.73E+07 | 8.04E+06 | 1.38E+06 | 7.55E+04 | 1.15E+05 | 7.62E+04 | 7.62E+04 | 0 | 0 | 0 | 0 |
| 4 | 130 | | 1.93E+07 | 3.25E+07 | 8.80E+07 | 1.11E+08 | 1.99E+07 | 4.95E+06 | 7.74E+05 | 2.06E+05 | 1.81E+05 | 1.03E+05 | 2.60E+04 | 5.20E+04 | 0 | 0 | 0 |
| 4 | 120 | | 2.01E+07 | 3.52E+07 | 9.64E+07 | 8.86E+07 | 1.28E+07 | 3.07E+06 | 3.36E+05 | 5.18E+04 | 7.75E+04 | 7.75E+04 | 0 | 0 | 2.59E+04 | 0 | 0 |
| 4 | 110 | | 1.82E+07 | 3.39E+07 | 9.87E+07 | 8.39E+07 | 1.25E+07 | 2.61E+06 | 3.65E+05 | 7.81E+04 | 2.61E+04 | 0 | 2.59E+04 | 0 | 0 | 0 | 0 |
| 4 | 100 | | 2.09E+07 | 4.66E+07 | 1.16E+08 | 7.31E+07 | 1.06E+07 | 1.49E+06 | 1.81E+05 | 1.80E+05 | 1.29E+05 | 5.18E+04 | 5.11E+04 | 0 | 2.63E+04 | 0 | 0 |
| 4 | 90 | | 2.26E+07 | 5.07E+07 | 1.22E+08 | 7.67E+07 | 1.09E+07 | 2.34E+06 | 3.38E+05 | 1.30E+05 | 7.79E+04 | 7.77E+04 | 5.18E+04 | 0 | 0 | 0 | 0 |
| 4 | 80 | | 2.55E+07 | 6.32E+07 | 1.27E+08 | 5.33E+07 | 6.16E+06 | 7.38E+05 | 1.06E+05 | 5.36E+04 | 5.24E+04 | 5.24E+04 | 0 | 0 | 0 | 0 | 0 |
| 4 | 70 | | 2.07E+07 | 6.44E+07 | 1.29E+08 | 4.96E+07 | 5.96E+06 | 1.01E+06 | 1.54E+05 | 1.91E+05 | 1.18E+05 | 3.94E+04 | 3.78E+04 | 3.78E+04 | 0 | 0 | 0 |
| 4 | 60 | | 1.98E+07 | 4.80E+07 | 6.87E+07 | 3.33E+07 | 6.34E+06 | 9.80E+05 | 1.19E+05 | 1.58E+05 | 1.54E+05 | 4.02E+04 | 7.72E+04 | 3.86E+04 | 0 | 0 | 0 |
| 4 | 50 | | 2.72E+07 | 8.53E+07 | 9.02E+07 | 2.32E+07 | 3.63E+06 | 5.24E+05 | 5.29E+04 | 2.36E+05 | 5.29E+04 | 2.67E+04 | 5.29E+04 | 2.62E+04 | 2.67E+04 | 0 | 0 |
| 4 | 40 | | 3.28E+07 | 1.11E+08 | 7.33E+07 | 1.31E+07 | 1.93E+06 | 5.14E+05 | 3.93E+04 | 7.94E+04 | 7.94E+04 | 0 | 3.97E+04 | 3.97E+04 | 0 | 0 | 0 |
| 4 | 30 | | 3.85E+07 | 7.92E+07 | 3.83E+07 | 1.11E+07 | 1.97E+06 | 5.08E+05 | 3.13E+05 | 2.32E+05 | 1.56E+05 | 0 | 3.86E+04 | 0 | 0 | 0 | 0 |
| 4 | 20 | | 3.24E+07 | 4.74E+07 | 2.92E+07 | 7.87E+06 | 9.56E+05 | 2.79E+05 | 1.05E+05 | 1.20E+05 | 9.37E+04 | 1.39E+04 | 1.36E+04 | 0 | 1.39E+04 | 0 | 0 |
| 4 | 10 | | 1.70E+07 | 2.46E+07 | 2.17E+07 | 3.75E+06 | 3.99E+05 | 7.97E+04 | 0 | 0 | 0 | 1.59E+05 | 0 | 0 | 0 | 0 | 0 |
| | 161632 | 161736 | | | | | | | | | | | | | | | |
| 5 | 230 | | 9.14E+04 | 9.14E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 220 | | 8.80E+06 | 1.47E+07 | 3.05E+07 | 4.64E+07 | 1.92E+07 | 4.07E+06 | 7.17E+05 | 3.25E+05 | 3.70E+04 | 0 | 0 | 3.70E+04 | 0 | 0 | 0 |
| 5 | 210 | | 1.57E+07 | 2.68E+07 | 6.00E+07 | 9.21E+07 | 2.10E+07 | 3.81E+06 | 9.03E+05 | 1.14E+05 | 3.81E+04 | 3.73E+04 | 3.73E+04 | 0 | 0 | 0 | 0 |
| 5 | 200 | | 1.39E+07 | 2.67E+07 | 4.85E+07 | 7.20E+07 | 2.21E+07 | 5.53E+06 | 1.72E+06 | 3.04E+05 | 9.40E+04 | 1.91E+04 | 0 | 0 | 0 | 0 | 0 |
| 5 | 190 | | 1.33E+07 | 2.24E+07 | 4.28E+07 | 7.27E+07 | 4.29E+07 | 1.29E+07 | 2.84E+06 | 6.38E+05 | 1.52E+05 | 5.07E+04 | 7.65E+04 | 0 | 0 | 0 | 0 |
| 5 | 180 | | 1.48E+07 | 2.18E+07 | 5.36E+07 | 1.01E+08 | 3.09E+07 | 7.39E+06 | 1.54E+06 | 4.55E+05 | 2.27E+05 | 7.61E+04 | 2.50E+04 | 0 | 0 | 0 | 0 |
| 5 | 170 | | 1.64E+07 | 2.60E+07 | 6.39E+07 | 9.56E+07 | 2.81E+07 | 6.57E+06 | 1.67E+06 | 6.57E+05 | 2.28E+05 | 5.04E+04 | 2.52E+04 | 0 | 0 | 0 | 0 |
| 5 | 160 | | 1.56E+07 | 2.56E+07 | 6.66E+07 | 1.10E+08 | 4.12E+07 | 1.02E+07 | 2.97E+06 | 1.11E+06 | 4.95E+05 | 2.28E+05 | 3.82E+04 | 0 | 0 | 0 | 0 |
| 5 | 150 | | 1.69E+07 | 2.56E+07 | 7.18E+07 | 1.11E+08 | 3.53E+07 | 7.80E+06 | 1.93E+06 | 7.33E+05 | 1.93E+05 | 1.93E+05 | 0 | 0 | 0 | 0 | 0 |
| 5 | 140 | | 1.54E+07 | 2.82E+07 | 6.84E+07 | 8.42E+07 | 1.96E+07 | 4.44E+06 | 1.06E+06 | 3.40E+05 | 7.53E+04 | 3.78E+04 | 3.75E+04 | 0 | 0 | 0 | 0 |
| 5 | 130 | | 1.85E+07 | 3.25E+07 | 8.35E+07 | 1.05E+08 | 2.76E+07 | 6.38E+06 | 1.56E+06 | 7.69E+05 | 3.20E+05 | 2.00E+05 | 0 | 0 | 0 | 0 | 0 |
| 5 | 120 | | 1.90E+07 | 3.55E+07 | 9.59E+07 | 9.46E+07 | 1.88E+07 | 4.36E+06 | 1.03E+06 | 5.50E+05 | 3.01E+05 | 1.01E+05 | 2.48E+04 | 2.48E+04 | 2.52E+04 | 0 | 0 |
| 5 | 110 | | 1.81E+07 | 3.57E+07 | 1.05E+08 | 1.02E+08 | 2.27E+07 | 5.19E+06 | 1.16E+06 | 4.38E+05 | 1.21E+05 | 1.05E+05 | 4.55E+04 | 0 | 0 | 0 | 0 |
| 5 | 100 | | 1.79E+07 | 3.54E+07 | 9.66E+07 | 8.07E+07 | 2.49E+07 | 5.66E+06 | 1.25E+06 | 5.10E+05 | 2.82E+05 | 5.04E+04 | 0 | 2.68E+04 | 0 | 0 | 0 |
| 5 | 90 | | 1.93E+07 | 4.64E+07 | 1.06E+08 | 7.48E+07 | 1.88E+07 | 4.20E+06 | 1.04E+06 | 3.05E+05 | 1.27E+05 | 0 | 2.57E+04 | 2.57E+04 | 2.52E+04 | 0 | 0 |
| 5 | 80 | | 2.12E+07 | 4.93E+07 | 8.03E+07 | 4.72E+07 | 7.94E+06 | 7.34E+05 | 2.71E+05 | 3.83E+04 | 0 | 0 | 0 | 3.83E+04 | 0 | 3.83E+04 | 0 |
| 5 | 70 | | 3.46E+07 | 7.70E+07 | 1.38E+08 | 5.59E+07 | 9.44E+06 | 2.27E+06 | 5.78E+05 | 1.54E+05 | 7.70E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 60 | | 1.77E+07 | 5.08E+07 | 1.07E+08 | 5.38E+07 | 1.39E+07 | 3.18E+06 | 7.38E+05 | 2.33E+05 | 1.55E+05 | 3.90E+04 | 3.87E+04 | 0 | 0 | 0 | 0 |
| 5 | 50 | | 1.62E+07 | 4.73E+07 | 6.89E+07 | 4.25E+07 | 1.05E+07 | 3.02E+06 | 7.40E+05 | 5.10E+05 | 1.56E+05 | 3.84E+04 | 7.89E+04 | 0 | 0 | 0 | 0 |
| 5 | 40 | | 2.26E+07 | 7.14E+07 | 5.72E+07 | 1.14E+07 | 1.25E+06 | 8.09E+04 | 3.97E+04 | 1.21E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 30 | | 1.76E+07 | 5.04E+07 | 4.35E+07 | 1.51E+07 | 1.82E+06 | 4.82E+05 | 7.87E+04 | 8.13E+04 | 8.13E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 20 | | 4.67E+07 | 5.37E+07 | 2.42E+07 | 1.21E+07 | 1.62E+06 | 4.97E+05 | 2.90E+05 | 1.66E+05 | 4.15E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 10 | | 5.61E+06 | 9.27E+06 | 9.60E+06 | 3.99E+06 | 1.08E+06 | 4.02E+05 | 3.26E+05 | 2.27E+05 | 1.53E+05 | 4.78E+04 | 2.78E+04 | 0 | 0 | 0 | 0 |
| | 162755 | 162907 | | | | | | | | | | | | | | | |
| 6 | 260 | | 1.71E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 250 | | 7.13E+06 | 9.99E+06 | 1.80E+07 | 4.47E+07 | 2.82E+07 | 7.94E+06 | 2.15E+06 | 7.05E+05 | 1.45E+05 | 2.44E+04 | 0 | 2.46E+04 | 0 | 0 | 0 |
| 6 | 240 | | 8.03E+06 | 9.59E+06 | 1.94E+07 | 4.80E+07 | 4.10E+07 | 1.69E+07 | 5.40E+06 | 1.69E+06 | 6.25E+05 | 2.21E+05 | 1.84E+05 | 0 | 0 | 0 | 0 |
| 6 | 230 | | 1.95E+07 | 1.72E+07 | 4.07E+07 | 1.39E+08 | 8.52E+07 | 3.08E+07 | 1.07E+07 | 3.24E+06 | 8.86E+05 | 1.72E+05 | 1.72E+05 | 2.43E+04 | 0 | 0 | 0 |
| 6 | 220 | | 2.17E+07 | 2.01E+07 | 6.40E+07 | 1.68E+08 | 8.06E+07 | 2.96E+07 | 9.46E+06 | 3.31E+06 | 1.07E+06 | 4.42E+05 | 7.33E+04 | 0 | 0 | 0 | 3.69E+04 |
| 6 | 210 | | 1.75E+07 | 1.93E+07 | 5.01E+07 | 1.42E+08 | 7.22E+07 | 2.78E+07 | 9.53E+06 | 4.14E+06 | 5.60E+05 | 3.90E+05 | 7.29E+04 | 0 | 0 | 2.42E+04 | 2.44E+04 |
| 6 | 200 | | 1.81E+07 | 1.86E+07 | 4.53E+07 | 1.11E+08 | 7.67E+07 | 2.50E+07 | 6.60E+06 | 1.72E+06 | 3.30E+05 | 1.10E+05 | 7.33E+04 | 3.66E+04 | 3.66E+04 | 0 | 0 |
| 6 | 190 | | 1.71E+07 | 1.89E+07 | 4.38E+07 | 1.16E+08 | 8.55E+07 | 2.72E+07 | 8.53E+06 | 2.26E+06 | 3.64E+05 | 1.10E+05 | 0 | 0 | 0 | 3.66E+04 | 0 |

## Arcata, CA

August 28, 1992

| Approach number | Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number per cubic meter | | | | | | | | | | | | | | |
| 6 | 180 | | 1.90E+07 | 2.26E+07 | 5.93E+07 | 1.24E+08 | 7.29E+07 | 2.75E+07 | 7.79E+06 | 2.40E+06 | 5.86E+05 | 1.96E+05 | 1.47E+05 | 2.47E+04 | 2.44E+04 | 2.47E+04 | 0 |
| 6 | 170 | | 2.31E+07 | 3.21E+07 | 9.11E+07 | 1.51E+08 | 4.81E+07 | 1.86E+07 | 7.15E+06 | 1.80E+06 | 6.91E+05 | 1.48E+05 | 4.92E+04 | 2.47E+04 | 2.45E+04 | 0 | 0 |
| 6 | 160 | | 1.37E+07 | 1.97E+07 | 4.99E+07 | 9.90E+07 | 6.10E+07 | 2.47E+07 | 7.45E+06 | 1.48E+06 | 3.94E+05 | 1.48E+05 | 2.49E+04 | 7.35E+04 | 0 | 0 | 0 |
| 6 | 150 | | 2.07E+07 | 2.61E+07 | 7.72E+07 | 1.09E+08 | 5.75E+07 | 2.31E+07 | 6.16E+06 | 1.95E+06 | 3.69E+05 | 2.72E+05 | 7.35E+04 | 2.45E+04 | 0 | 2.45E+04 | 0 |
| 6 | 140 | | 1.84E+07 | 2.67E+07 | 7.28E+07 | 1.01E+08 | 5.81E+07 | 2.38E+07 | 6.67E+06 | 2.10E+06 | 7.37E+05 | 1.47E+05 | 7.38E+04 | 0 | 3.68E+04 | 0 | 0 |
| 6 | 130 | | 1.85E+07 | 3.12E+07 | 8.02E+07 | 9.34E+07 | 4.75E+07 | 2.15E+07 | 7.48E+06 | 3.40E+06 | 1.04E+06 | 4.06E+05 | 1.84E+05 | 0 | 3.69E+04 | 0 | 0 |
| 6 | 120 | | 2.56E+07 | 3.86E+07 | 1.21E+08 | 9.72E+07 | 3.51E+07 | 1.22E+07 | 3.39E+06 | 8.23E+05 | 4.09E+05 | 1.12E+05 | 3.79E+04 | 0 | 0 | 0 | 0 |
| 6 | 110 | | 1.75E+07 | 3.46E+07 | 8.60E+07 | 9.09E+07 | 4.61E+07 | 1.59E+07 | 5.64E+06 | 3.02E+06 | 8.22E+05 | 1.50E+05 | 1.50E+05 | 7.49E+04 | 5.00E+04 | 2.52E+04 | 0 |
| 6 | 100 | | 1.93E+07 | 4.66E+07 | 9.38E+07 | 7.50E+07 | 2.79E+07 | 7.78E+06 | 2.38E+06 | 7.08E+05 | 2.61E+05 | 1.49E+05 | 0 | 0 | 0 | 0 | 0 |
| 6 | 90 | | 3.16E+07 | 6.44E+07 | 1.10E+08 | 6.63E+07 | 2.54E+07 | 9.71E+06 | 3.65E+06 | 1.99E+06 | 9.78E+05 | 1.13E+05 | 1.51E+05 | 7.45E+04 | 0 | 0 | 0 |
| 6 | 80 | | 2.92E+07 | 8.19E+07 | 1.61E+08 | 6.13E+07 | 1.85E+07 | 6.36E+06 | 2.59E+06 | 1.33E+06 | 4.19E+05 | 1.14E+05 | 3.79E+04 | 0 | 0 | 0 | 0 |
| 6 | 70 | | 2.89E+07 | 8.04E+07 | 1.55E+08 | 4.59E+07 | 7.78E+06 | 1.59E+06 | 4.09E+05 | 1.79E+05 | 1.02E+05 | 2.56E+04 | 0 | 0 | 0 | 0 | 0 |
| 6 | 60 | | 2.33E+07 | 7.15E+07 | 1.03E+08 | 3.68E+07 | 1.24E+07 | 4.62E+06 | 1.58E+06 | 1.09E+06 | 4.57E+05 | 2.29E+05 | 2.57E+04 | 5.01E+04 | 0 | 0 | 0 |
| 6 | 50 | | 2.98E+07 | 1.24E+08 | 1.33E+08 | 2.57E+07 | 6.92E+06 | 1.57E+06 | 6.79E+05 | 4.17E+05 | 1.31E+05 | 2.63E+04 | 0 | 0 | 0 | 0 | 0 |
| 6 | 40 | | 4.20E+07 | 1.16E+08 | 6.62E+07 | 2.15E+07 | 6.31E+06 | 2.16E+06 | 5.52E+05 | 2.37E+05 | 7.88E+04 | 5.25E+04 | 2.64E+04 | 0 | 0 | 0 | 0 |
| 6 | 30 | | 5.74E+07 | 1.09E+08 | 5.95E+07 | 2.29E+07 | 8.11E+06 | 3.47E+06 | 2.02E+06 | 1.11E+06 | 7.10E+05 | 1.05E+05 | 1.84E+05 | 2.64E+04 | 0 | 0 | 0 |
| 6 | 20 | | 2.80E+07 | 4.47E+07 | 3.36E+07 | 1.83E+07 | 7.43E+06 | 4.41E+06 | 2.56E+06 | 1.82E+06 | 6.10E+05 | 2.34E+05 | 9.08E+04 | 6.54E+04 | 2.65E+04 | 2.59E+04 | 0 |
| 6 | 10 | | 4.05E+06 | 9.06E+06 | 7.90E+06 | 3.89E+06 | 1.00E+06 | 2.97E+05 | 5.30E+04 | 3.07E+04 | 2.16E+04 | 0 | 1.04E+04 | 0 | 0 | 0 | 0 |
| | 163940 | 164048 | | | | | | | | | | | | | | | |
| 7 | 290 | | 8.81E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 280 | | 1.74E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 270 | | 1.64E+06 | 1.56E+06 | 4.20E+06 | 9.41E+06 | 5.56E+06 | 1.94E+06 | 4.17E+05 | 6.95E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 260 | | 1.15E+07 | 1.29E+07 | 2.53E+07 | 7.78E+07 | 6.94E+07 | 2.46E+07 | 6.87E+06 | 1.58E+06 | 5.18E+05 | 1.84E+05 | 3.72E+04 | 3.72E+04 | 3.64E+04 | 0 | 0 |
| 7 | 250 | | 8.47E+06 | 9.62E+06 | 1.65E+07 | 4.51E+07 | 4.33E+07 | 1.73E+07 | 4.62E+06 | 1.24E+06 | 1.40E+05 | 9.30E+04 | 2.43E+04 | 6.98E+04 | 7.02E+04 | 2.32E+04 | 0 |
| 7 | 240 | | 1.65E+07 | 1.32E+07 | 3.57E+07 | 1.18E+08 | 1.04E+08 | 3.25E+07 | 8.91E+06 | 2.22E+06 | 8.45E+05 | 2.11E+05 | 3.49E+04 | 1.05E+05 | 0 | 3.49E+04 | 0 |
| 7 | 230 | | 2.03E+07 | 1.94E+07 | 3.66E+07 | 1.14E+08 | 8.48E+07 | 3.20E+07 | 8.43E+06 | 1.87E+06 | 6.71E+05 | 1.76E+05 | 1.41E+05 | 3.51E+04 | 0 | 0 | 0 |
| 7 | 220 | | 1.27E+07 | 1.46E+07 | 2.93E+07 | 7.20E+07 | 5.74E+07 | 2.44E+07 | 7.65E+06 | 2.35E+06 | 4.00E+05 | 2.83E+05 | 1.41E+05 | 9.37E+04 | 2.33E+04 | 0 | 0 |
| 7 | 210 | | 2.88E+07 | 2.97E+07 | 8.97E+07 | 1.75E+08 | 5.68E+07 | 2.44E+07 | 7.13E+06 | 3.00E+06 | 1.22E+06 | 1.75E+05 | 2.10E+05 | 7.01E+04 | 7.01E+04 | 6.97E+04 | 3.48E+04 |
| 7 | 200 | | 2.84E+07 | 2.59E+07 | 9.30E+07 | 1.93E+08 | 5.68E+07 | 2.15E+07 | 6.93E+06 | 2.51E+06 | 7.32E+05 | 4.52E+05 | 1.05E+05 | 7.00E+04 | 3.47E+04 | 0 | 0 |
| 7 | 190 | | 2.96E+07 | 2.94E+07 | 1.00E+08 | 1.83E+08 | 5.15E+07 | 2.03E+07 | 7.50E+06 | 3.14E+06 | 1.36E+06 | 4.18E+05 | 3.14E+05 | 1.40E+05 | 3.50E+04 | 0 | 0 |
| 7 | 180 | | 2.50E+07 | 3.18E+07 | 9.92E+07 | 1.54E+08 | 5.21E+07 | 1.95E+07 | 8.22E+06 | 3.26E+06 | 1.53E+06 | 4.51E+05 | 1.39E+05 | 2.09E+05 | 6.97E+04 | 0 | 0 |
| 7 | 170 | | 2.96E+07 | 3.73E+07 | 1.18E+08 | 1.60E+08 | 4.50E+07 | 1.94E+07 | 7.72E+06 | 3.58E+06 | 1.40E+06 | 4.21E+05 | 2.81E+05 | 7.02E+04 | 7.02E+04 | 0 | 0 |
| 7 | 160 | | 3.00E+07 | 4.11E+07 | 1.14E+08 | 1.46E+08 | 4.37E+07 | 1.77E+07 | 8.23E+06 | 3.24E+06 | 1.14E+06 | 3.73E+05 | 2.80E+05 | 1.40E+05 | 2.34E+04 | 4.66E+04 | 2.34E+04 |
| 7 | 150 | | 3.26E+07 | 4.01E+07 | 1.51E+08 | 1.68E+08 | 3.30E+07 | 1.33E+07 | 5.38E+06 | 2.32E+06 | 5.94E+05 | 5.61E+05 | 2.10E+05 | 6.98E+04 | 0 | 0 | 0 |
| 7 | 140 | | 2.87E+07 | 5.03E+07 | 1.34E+08 | 1.13E+08 | 3.72E+07 | 1.62E+07 | 6.06E+06 | 2.37E+06 | 6.28E+05 | 3.49E+05 | 2.09E+05 | 1.05E+05 | 0 | 0 | 0 |
| 7 | 130 | | 3.66E+07 | 6.25E+07 | 1.70E+08 | 1.24E+08 | 3.06E+07 | 1.13E+07 | 4.34E+06 | 1.33E+06 | 5.60E+05 | 2.10E+05 | 2.80E+05 | 7.00E+04 | 7.00E+04 | 7.00E+04 | 0 |
| 7 | 120 | | 2.95E+07 | 4.70E+07 | 1.22E+08 | 1.12E+08 | 3.91E+07 | 1.50E+07 | 5.66E+06 | 2.82E+06 | 1.08E+06 | 6.60E+05 | 1.40E+05 | 0 | 3.46E+04 | 0 | 0 |
| 7 | 110 | | 3.08E+07 | 6.80E+07 | 1.40E+08 | 8.77E+07 | 2.92E+07 | 1.30E+07 | 5.99E+06 | 2.18E+06 | 8.49E+05 | 3.52E+05 | 2.59E+05 | 1.18E+05 | 4.65E+04 | 2.33E+04 | 2.33E+04 |
| 7 | 100 | | 3.41E+07 | 8.13E+07 | 1.71E+08 | 7.45E+07 | 1.78E+07 | 5.98E+06 | 2.34E+06 | 7.69E+05 | 2.44E+05 | 1.40E+05 | 1.05E+05 | 3.48E+04 | 0 | 3.48E+04 | 0 |
| 7 | 90 | | 3.51E+07 | 7.14E+07 | 1.93E+08 | 8.98E+07 | 1.82E+07 | 7.31E+06 | 3.44E+06 | 1.20E+06 | 6.36E+05 | 3.53E+05 | 1.06E+05 | 7.04E+04 | 5.29E+04 | 0 | 1.76E+04 |
| 7 | 80 | | 2.92E+07 | 7.46E+07 | 1.47E+08 | 7.48E+07 | 2.44E+07 | 1.15E+07 | 4.49E+06 | 1.79E+06 | 7.23E+05 | 5.79E+05 | 2.89E+05 | 9.71E+04 | 4.85E+04 | 2.39E+04 | 0 |
| 7 | 70 | | 3.83E+07 | 1.03E+08 | 1.52E+08 | 6.18E+07 | 2.18E+07 | 8.50E+06 | 3.67E+06 | 1.55E+06 | 6.31E+05 | 1.85E+05 | 1.46E+05 | 1.13E+05 | 3.65E+04 | 3.65E+04 | 0 |
| 7 | 60 | | 3.29E+07 | 1.01E+08 | 1.40E+08 | 4.86E+07 | 1.59E+07 | 5.63E+06 | 2.19E+06 | 8.81E+05 | 5.01E+05 | 2.02E+05 | 1.75E+05 | 4.99E+04 | 2.50E+04 | 2.50E+04 | 2.50E+04 |
| 7 | 50 | | 3.51E+07 | 1.08E+08 | 1.19E+08 | 4.02E+07 | 1.53E+07 | 5.04E+06 | 2.66E+06 | 7.59E+05 | 2.26E+05 | 1.88E+05 | 0 | 3.76E+04 | 0 | 0 | 0 |
| 7 | 40 | | 2.95E+07 | 8.77E+07 | 7.36E+07 | 3.19E+07 | 1.04E+07 | 2.65E+06 | 6.53E+05 | 2.31E+05 | 1.15E+05 | 0 | 3.83E+04 | 0 | 0 | 0 | 0 |
| 7 | 30 | | 4.93E+07 | 8.77E+07 | 4.98E+07 | 2.30E+07 | 9.26E+06 | 5.37E+06 | 2.01E+06 | 1.21E+06 | 4.37E+05 | 1.03E+05 | 7.72E+04 | 2.59E+04 | 0 | 2.59E+04 | 0 |
| 7 | 20 | | 4.16E+07 | 4.95E+07 | 3.34E+07 | 2.11E+07 | 8.38E+06 | 3.32E+06 | 1.26E+06 | 4.74E+05 | 7.90E+04 | 7.90E+04 | 7.90E+04 | 0 | 0 | 0 | 0 |
| 7 | 10 | | 7.69E+06 | 1.07E+07 | 1.04E+07 | 6.14E+06 | 2.47E+06 | 1.09E+06 | 4.50E+05 | 2.15E+05 | 1.25E+05 | 9.43E+04 | 5.17E+04 | 4.24E+04 | 2.07E+04 | 0 | 1.07E+04 |

## Arcata, CA

August 28, 1992

| Approach number | Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number per cubic meter | | | | | | | | | | | | | | |
| | 165207 | 165325 | | | | | | | | | | | | | | | |
| 8 | 290 | | 1.04E+07 | 1.33E+07 | 1.94E+07 | 4.20E+07 | 3.59E+07 | 1.03E+07 | 2.23E+06 | 5.76E+05 | 7.20E+04 | 7.20E+04 | 0 | 7.20E+04 | 7.20E+04 | 0 | 0 |
| 8 | 280 | | 1.37E+07 | 1.65E+07 | 3.85E+07 | 9.84E+07 | 5.42E+07 | 1.19E+07 | 3.31E+06 | 5.75E+05 | 1.44E+05 | 7.19E+04 | 0 | 0 | 0 | 0 | 0 |
| 8 | 270 | | 2.61E+07 | 2.59E+07 | 7.55E+07 | 2.02E+08 | 9.71E+07 | 2.63E+07 | 6.33E+06 | 8.32E+05 | 1.73E+05 | 4.90E+04 | 9.67E+04 | 0 | 0 | 2.49E+04 | 0 |
| 8 | 260 | | 2.07E+07 | 1.59E+07 | 4.26E+07 | 1.65E+08 | 1.06E+08 | 2.81E+07 | 7.02E+06 | 1.50E+06 | 3.76E+05 | 1.13E+05 | 1.50E+05 | 1.13E+05 | 0 | 0 | 0 |
| 8 | 250 | | 2.23E+07 | 1.78E+07 | 5.62E+07 | 2.22E+08 | 8.94E+07 | 2.44E+07 | 6.36E+06 | 1.50E+06 | 3.76E+05 | 1.50E+05 | 4.99E+04 | 4.98E+04 | 2.50E+04 | 0 | 0 |
| 8 | 240 | | 1.80E+07 | 1.82E+07 | 5.79E+07 | 1.89E+08 | 7.91E+07 | 2.06E+07 | 4.13E+06 | 4.54E+05 | 5.06E+04 | 7.71E+04 | 2.53E+04 | 0 | 0 | 0 | 2.57E+04 |
| 8 | 230 | | 2.23E+07 | 1.93E+07 | 8.36E+07 | 2.35E+08 | 5.94E+07 | 1.45E+07 | 3.24E+06 | 2.66E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 220 | | 2.12E+07 | 1.95E+07 | 7.77E+07 | 2.09E+08 | 7.39E+07 | 2.04E+07 | 4.88E+06 | 7.24E+05 | 3.06E+05 | 7.62E+04 | 7.62E+04 | 1.14E+05 | 0 | 0 | 0 |
| 8 | 210 | | 2.33E+07 | 2.53E+07 | 9.88E+07 | 1.85E+08 | 7.05E+07 | 2.04E+07 | 4.05E+06 | 7.96E+05 | 7.61E+04 | 3.74E+04 | 0 | 0 | 0 | 0 | 0 |
| 8 | 200 | | 2.13E+07 | 2.57E+07 | 8.49E+07 | 1.69E+08 | 7.01E+07 | 1.87E+07 | 3.07E+06 | 5.00E+05 | 3.87E+04 | 7.63E+04 | 7.68E+04 | 0 | 0 | 0 | 0 |
| 8 | 190 | | 1.88E+07 | 2.25E+07 | 7.15E+07 | 1.62E+08 | 6.52E+07 | 1.43E+07 | 3.07E+06 | 2.66E+05 | 3.77E+04 | 3.83E+04 | 3.77E+04 | 0 | 0 | 0 | 0 |
| 8 | 180 | | 1.80E+07 | 2.24E+07 | 7.32E+07 | 1.66E+08 | 5.80E+07 | 1.52E+07 | 3.36E+06 | 4.39E+05 | 1.79E+05 | 2.53E+04 | 5.22E+04 | 0 | 0 | 0 | 0 |
| 8 | 170 | | 1.99E+07 | 2.54E+07 | 8.68E+07 | 1.65E+08 | 5.39E+07 | 1.45E+07 | 2.17E+06 | 4.64E+05 | 7.74E+04 | 0 | 7.74E+04 | 7.74E+04 | 0 | 0 | 0 |
| 8 | 160 | | 2.21E+07 | 3.04E+07 | 1.17E+08 | 1.56E+08 | 4.48E+07 | 1.06E+07 | 2.21E+06 | 3.36E+05 | 5.11E+04 | 0 | 0 | 2.55E+04 | 0 | 0 | 0 |
| 8 | 150 | | 2.20E+07 | 3.92E+07 | 1.31E+08 | 1.34E+08 | 3.07E+07 | 7.75E+06 | 1.26E+06 | 3.13E+05 | 1.04E+05 | 5.20E+04 | 2.64E+04 | 0 | 2.64E+04 | 0 | 0 |
| 8 | 140 | | 2.58E+07 | 5.06E+07 | 1.51E+08 | 1.25E+08 | 2.81E+07 | 8.78E+06 | 2.40E+06 | 9.53E+05 | 2.29E+05 | 2.67E+05 | 0 | 3.81E+04 | 0 | 0 | 0 |
| 8 | 130 | | 2.34E+07 | 4.86E+07 | 1.36E+08 | 1.09E+08 | 3.09E+07 | 8.71E+06 | 3.37E+06 | 1.08E+06 | 4.64E+05 | 1.93E+05 | 3.10E+05 | 3.86E+04 | 0 | 0 | 0 |
| 8 | 120 | | 2.68E+07 | 6.72E+07 | 1.20E+08 | 5.89E+07 | 1.55E+07 | 3.24E+06 | 5.79E+05 | 1.58E+05 | 1.06E+05 | 5.25E+04 | 2.61E+04 | 2.64E+04 | 0 | 2.64E+04 | 0 |
| 8 | 110 | | 3.21E+07 | 7.74E+07 | 1.75E+08 | 6.38E+07 | 1.74E+07 | 5.86E+06 | 1.71E+06 | 3.09E+05 | 1.16E+05 | 3.85E+04 | 0 | 0 | 0 | 0 | 0 |
| 8 | 100 | | 2.71E+07 | 7.22E+07 | 1.25E+08 | 5.69E+07 | 1.89E+07 | 5.84E+06 | 1.49E+06 | 3.53E+05 | 1.17E+05 | 3.93E+04 | 3.93E+04 | 3.93E+04 | 3.90E+04 | 0 | 0 |
| 8 | 90 | | 2.58E+07 | 9.90E+07 | 1.53E+08 | 4.28E+07 | 9.32E+06 | 2.17E+06 | 3.43E+05 | 7.93E+04 | 7.81E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 80 | | 3.07E+07 | 1.20E+08 | 1.53E+08 | 3.48E+07 | 7.27E+06 | 1.90E+06 | 3.69E+05 | 1.06E+05 | 5.31E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 70 | | 3.71E+07 | 1.17E+08 | 1.26E+08 | 2.74E+07 | 7.79E+06 | 2.09E+06 | 5.28E+05 | 2.38E+05 | 5.28E+04 | 2.64E+04 | 5.28E+04 | 2.64E+04 | 0 | 0 | 0 |
| 8 | 60 | | 3.85E+07 | 1.51E+08 | 1.48E+08 | 2.43E+07 | 6.93E+06 | 2.54E+06 | 8.12E+05 | 3.49E+05 | 1.09E+05 | 8.18E+04 | 2.69E+04 | 0 | 0 | 0 | 0 |
| 8 | 50 | | 2.98E+07 | 1.27E+08 | 1.06E+08 | 2.39E+07 | 5.01E+06 | 1.00E+06 | 1.06E+05 | 1.06E+05 | 2.67E+04 | 2.67E+04 | 2.67E+04 | 0 | 0 | 0 | 0 |
| 8 | 40 | | 2.48E+07 | 6.50E+07 | 4.90E+07 | 1.98E+07 | 6.49E+06 | 2.16E+06 | 3.79E+05 | 1.10E+05 | 8.13E+04 | 5.51E+04 | 0 | 0 | 0 | 0 | 0 |
| 8 | 30 | | 6.39E+07 | 8.15E+07 | 3.20E+07 | 9.12E+06 | 1.86E+06 | 3.37E+05 | 1.41E+05 | 0 | 0 | 2.80E+04 | 0 | 2.80E+04 | 0 | 0 | 0 |
| 8 | 20 | | 4.91E+07 | 4.61E+07 | 1.74E+07 | 5.35E+06 | 1.90E+06 | 2.00E+05 | 3.94E+04 | 1.23E+05 | 4.18E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10 | | 2.05E+06 | 2.97E+06 | 2.04E+06 | 6.84E+05 | 1.83E+05 | 1.93E+05 | 9.43E+04 | 1.13E+05 | 4.02E+04 | 5.32E+04 | 2.93E+04 | 2.65E+04 | 0 | 0 | 0 |

# Arcata, CA

August 28, 1992

Number per cubic meter

Size: 20 microns Range: 10-310 microns

| Approach number | Altitude (m) | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Begin time* | *End time* | | | | | | | | | | | | | | |
| | 152008 | 152048 | | | | | | | | | | | | | | |
| 1 | 110 | 1.55E+06 | 2.87E+05 | 4.85E+04 | 1.27E+04 | 8548 | 1676 | 327.5 | 800.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 100 | 3.18E+06 | 7.70E+05 | 1.09E+05 | 3.74E+04 | 1.84E+04 | 1684 | 3300 | 537 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 90 | 2.04E+06 | 1.61E+05 | 5785 | 3425 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 80 | 3.04E+06 | 7.65E+05 | 8.36E+04 | 1.02E+04 | 2304 | 1699 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 70 | 2.98E+06 | 5.41E+05 | 3.44E+04 | 1.02E+04 | 1149 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 60 | 2.89E+06 | 5.90E+05 | 5.17E+04 | 8480 | 0 | 0 | 0 | 0 | 456.3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 50 | 2.42E+06 | 5.67E+05 | 4.60E+04 | 6814 | 4604 | 0 | 661.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 40 | 1.82E+06 | 5.30E+05 | 5.60E+04 | 1.60E+04 | 3096 | 1701 | 0 | 361.3 | 306 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 30 | 2.17E+06 | 4.51E+05 | 2.73E+04 | 1.27E+04 | 3887 | 0 | 0 | 0 | 309.6 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 20 | 2.13E+06 | 4.69E+05 | 5.59E+04 | 2811 | 473 | 1056 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 10 | 2.22E+06 | 6.32E+05 | 1.07E+05 | 3.49E+04 | 1.33E+04 | 5084 | 1932 | 975.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 153634 | 153711 | | | | | | | | | | | | | | |
| 2 | 110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 100 | 2.34E+04 | 6140 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 90 | 6.77E+05 | 7.34E+04 | 8563 | 1686 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 80 | 1.04E+06 | 1.62E+05 | 1.32E+04 | 1117 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 70 | 2.23E+06 | 4.44E+05 | 2.84E+04 | 6720 | 4533 | 837 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 60 | 1.92E+06 | 3.14E+05 | 2.07E+04 | 4452 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 50 | 1.97E+06 | 3.27E+05 | 1.98E+04 | 3348 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 40 | 2.60E+06 | 5.15E+05 | 5.29E+04 | 1.23E+04 | 2260 | 556.3 | 0 | 354.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 30 | 2.80E+06 | 5.74E+05 | 4.40E+04 | 7954 | 761.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 20 | 2.38E+06 | 4.16E+05 | 4.85E+04 | 1.38E+04 | 3874 | 568.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 10 | 2.10E+06 | 4.25E+05 | 7.01E+04 | 1.86E+04 | 5965 | 1971 | 664 | 181.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 154746 | 154826 | | | | | | | | | | | | | | |
| 3 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 190 | 1.61E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 180 | 6.74E+05 | 1.89E+05 | 1.18E+04 | 1741 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 170 | 1.57E+06 | 3.42E+05 | 8885 | 1753 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 160 | 3.21E+06 | 7.41E+05 | 4.43E+04 | 9166 | 1475 | 434.4 | 0 | 0 | 117 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 150 | 3.50E+06 | 7.12E+05 | 5.20E+04 | 7533 | 737.3 | 217.2 | 0 | 186.7 | 216.6 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 140 | 3.78E+06 | 6.83E+05 | 5.98E+04 | 5900 | 0 | 0 | 0 | 373.3 | 316.2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 130 | 3.33E+06 | 7.63E+05 | 4.80E+04 | 7088 | 4778 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 120 | 3.70E+06 | 1.01E+06 | 1.15E+05 | 3.24E+04 | 6075 | 4467 | 1396 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 110 | 4.01E+06 | 9.60E+05 | 1.07E+05 | 2.89E+04 | 1.22E+04 | 2687 | 1396 | 570 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 100 | 4.51E+06 | 8.59E+05 | 1.04E+05 | 2.54E+04 | 4899 | 2698 | 0 | 572.5 | 486.4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 90 | 5.32E+06 | 9.76E+05 | 1.02E+05 | 2.57E+04 | 8670 | 908.5 | 0 | 0 | 493.1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 80 | 4.93E+06 | 8.52E+05 | 9.94E+04 | 1.47E+04 | 9944 | 3656 | 4281 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 70 | 4.22E+06 | 9.54E+05 | 1.42E+05 | 2.56E+04 | 6180 | 907.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 60 | 3.17E+06 | 6.28E+05 | 7.64E+04 | 2.71E+04 | 4876 | 901 | 1397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 50 | 3.57E+06 | 8.17E+05 | 6.76E+04 | 1.45E+04 | 1.11E+04 | 2718 | 1412 | 577.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 40 | 3.64E+06 | 5.94E+05 | 7.61E+04 | 2.43E+04 | 8204 | 2146 | 1350 | 557.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 155924 | 160016 | | | | | | | | | | | | | | |
| 4 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 190 | 1.59E+05 | 4153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 180 | 1.26E+06 | 2.67E+05 | 1.45E+04 | 3439 | 1156 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 170 | 1.17E+06 | 2.07E+05 | 1.16E+04 | 1136 | 0 | 0 | 0 | 0 | 307.5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 160 | 1.35E+06 | 3.34E+05 | 1.44E+04 | 5131 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Arcata, CA

August 28, 1992

| Approach number | Altitude (m) / *Begin time* | Bin 1 / *End time* | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Number per cubic meter | | | | | | | | |
| 4 | 150 | 7.13E+05 | 1.33E+05 | 1929 | 0 | 0 | 0 | 0 | 0 | 1230 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 140 | 7.68E+05 | 1.57E+05 | 2924 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 130 | 2.37E+06 | 3.61E+05 | 7924 | 1.17E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 120 | 1.91E+06 | 3.38E+05 | 2.99E+04 | 3542 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 110 | 2.05E+06 | 3.59E+05 | 1.82E+04 | 7167 | 808.3 | 592.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 100 | 2.62E+06 | 4.61E+05 | 5.63E+04 | 1.79E+04 | 9662 | 3544 | 1851 | 753.3 | 318.7 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 90 | 3.05E+06 | 5.22E+05 | 5.03E+04 | 9540 | 6441 | 1777 | 1847 | 376.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 80 | 2.51E+06 | 4.02E+05 | 4.84E+04 | 8363 | 4036 | 1779 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 70 | 2.20E+06 | 4.26E+05 | 3.93E+04 | 1.25E+04 | 3622 | 889 | 0 | 564.5 | 478 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 60 | 2.10E+06 | 4.23E+05 | 4.18E+04 | 3540 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 50 | 2.21E+06 | 4.01E+05 | 2.82E+04 | 3567 | 802 | 592.3 | 460.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 40 | 1.52E+06 | 2.12E+05 | 2.40E+04 | 8880 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 30 | 1.35E+06 | 2.45E+05 | 6013 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 20 | 2.03E+06 | 4.05E+05 | 4.00E+04 | 1.42E+04 | 2794 | 1462 | 917.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 10 | 1.83E+06 | 4.17E+05 | 4.13E+04 | 2.44E+04 | 9432 | 5202 | 0 | 2211 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 161632 | 161736 | | | | | | | | | | | | | | |
| 5 | 230 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 220 | 5.81E+05 | 1.90E+04 | 2958 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 210 | 1.33E+06 | 1.65E+05 | 2.66E+04 | 5264 | 2368 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 200 | 9.40E+05 | 1.53E+05 | 1.34E+04 | 3514 | 1190 | 435.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 190 | 1.39E+06 | 2.32E+05 | 1.80E+04 | 5931 | 2405 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 180 | 1.47E+06 | 2.56E+05 | 2.79E+04 | 7075 | 1592 | 1171 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 170 | 2.16E+06 | 3.27E+05 | 3.96E+04 | 7018 | 1583 | 1163 | 908.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 160 | 2.93E+06 | 4.03E+05 | 4.18E+04 | 1.42E+04 | 1197 | 880 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 150 | 1.89E+06 | 2.58E+05 | 3.31E+04 | 7115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 140 | 1.88E+06 | 2.30E+05 | 1.78E+04 | 0 | 1183 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 130 | 1.91E+06 | 3.61E+05 | 3.72E+04 | 1.05E+04 | 1565 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 120 | 1.76E+06 | 2.35E+05 | 3.53E+04 | 1.04E+04 | 1565 | 573 | 0 | 368.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 110 | 1.58E+06 | 2.57E+05 | 2.16E+04 | 6415 | 2377 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 100 | 1.99E+06 | 2.57E+05 | 3.45E+04 | 3607 | 2438 | 597 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 90 | 1.77E+06 | 2.75E+05 | 2.65E+04 | 1.09E+04 | 2453 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 80 | 2.14E+06 | 2.31E+05 | 3.07E+04 | 5461 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 70 | 1.40E+06 | 2.02E+05 | 1.52E+04 | 5417 | 1217 | 895 | 698.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 60 | 1.83E+06 | 2.56E+05 | 2.75E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 50 | 1.38E+06 | 2.04E+05 | 2.45E+04 | 1826 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 40 | 1.32E+06 | 1.66E+05 | 1.24E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 30 | 1.13E+06 | 2.63E+05 | 1.53E+04 | 1815 | 1226 | 902 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 20 | 9.25E+05 | 1.64E+05 | 1.53E+04 | 9056 | 1218 | 1804 | 699 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 10 | 8.93E+05 | 1.47E+05 | 1.63E+04 | 3431 | 2005 | 206.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 162755 | 162907 | | | | | | | | | | | | | | |
| 6 | 260 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 250 | 4.33E+05 | 1.30E+05 | 1.32E+04 | 4473 | 755.7 | 0 | 433.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 240 | 4.85E+05 | 9.06E+04 | 5659 | 1667 | 2253 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 230 | 1.02E+06 | 2.08E+05 | 2.05E+04 | 5519 | 5218 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 220 | 7.82E+05 | 1.75E+05 | 4.50E+04 | 4989 | 1122 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 210 | 9.17E+05 | 2.36E+05 | 2.99E+04 | 5535 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 200 | 1.03E+06 | 2.45E+05 | 3.08E+04 | 8295 | 2244 | 819.5 | 644 | 1567 | 884.5 | 421.7 | 0 | 0 | 0 | 0 | 0 |
| 6 | 190 | 1.27E+06 | 2.77E+05 | 2.82E+04 | 3333 | 5629 | 1656 | 646 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Arcata, CA

August 28, 1992

| Approach number | Altitude (m) Begin time | Bin 1 End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Number per cubic meter | | | | | | | | |
| 6 | 180 | 1.00E+06 | 2.30E+05 | 1.51E+04 | 5576 | 752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 170 | 9.14E+05 | 1.82E+05 | 2.46E+04 | 3352 | 0 | 1115 | 1307 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 160 | 7.69E+05 | 1.27E+05 | 1.92E+04 | 7925 | 763.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 150 | 7.32E+05 | 2.57E+05 | 3.80E+04 | 5625 | 3046 | 561.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 140 | 8.40E+05 | 2.87E+05 | 3.71E+04 | 1.01E+04 | 2283 | 1679 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 130 | 1.15E+06 | 2.51E+05 | 4.28E+04 | 5072 | 5709 | 840 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 120 | 7.79E+05 | 1.55E+05 | 1.15E+04 | 5160 | 3469 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 110 | 1.20E+06 | 2.43E+05 | 2.12E+04 | 4561 | 2310 | 0 | 885 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 100 | 1.42E+06 | 2.85E+05 | 2.31E+04 | 6839 | 1157 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 90 | 1.52E+06 | 2.68E+05 | 6.96E+04 | 1.03E+04 | 2315 | 857 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 80 | 1.13E+06 | 1.76E+05 | 5.00E+04 | 1.57E+04 | 1174 | 1731 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 70 | 9.96E+05 | 1.98E+05 | 2.75E+04 | 9317 | 3147 | 2887 | 450 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 60 | 6.57E+05 | 1.60E+05 | 1.56E+04 | 8113 | 1561 | 573 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 50 | 1.18E+06 | 2.20E+05 | 1.61E+04 | 4770 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 40 | 1.05E+06 | 2.18E+05 | 2.59E+04 | 1.54E+04 | 5602 | 1761 | 1375 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 30 | 9.03E+05 | 1.77E+05 | 2.56E+04 | 1.17E+04 | 3945 | 580.7 | 453 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 20 | 7.81E+05 | 1.94E+05 | 2.95E+04 | 8715 | 1193 | 287.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 10 | 4.92E+05 | 1.38E+05 | 2.37E+04 | 7710 | 2467 | 1272 | 815.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 163940 | 164048 | | | | | | | | | | | | | | |
| 7 | 290 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 280 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 270 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 260 | 2.76E+05 | 6.03E+04 | 2822 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 250 | 7.45E+04 | 1.95E+04 | 1820 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 240 | 4.47E+05 | 7.61E+04 | 2726 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 230 | 4.24E+05 | 4.09E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 220 | 4.46E+05 | 6.62E+04 | 7250 | 3237 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 210 | 4.46E+05 | 1.11E+05 | 1.91E+04 | 4840 | 4354 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 200 | 5.55E+05 | 1.39E+05 | 2.98E+04 | 9633 | 1085 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 190 | 8.44E+05 | 1.80E+05 | 2.17E+04 | 8030 | 1081 | 3193 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 180 | 8.43E+05 | 1.80E+05 | 5.43E+04 | 9636 | 2170 | 3191 | 623 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 170 | 7.59E+05 | 2.46E+05 | 5.46E+04 | 3232 | 2184 | 4817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 160 | 6.09E+05 | 2.26E+05 | 2.36E+04 | 5373 | 2905 | 533 | 1250 | 339.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 150 | 3.80E+05 | 1.52E+05 | 1.09E+04 | 6463 | 3265 | 805 | 1256 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 140 | 8.21E+05 | 1.86E+05 | 3.80E+04 | 1.12E+04 | 2170 | 1595 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 130 | 6.18E+05 | 2.54E+05 | 4.85E+04 | 1.28E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 120 | 5.94E+05 | 2.02E+05 | 4.30E+04 | 4770 | 0 | 1580 | 1232 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 110 | 7.08E+05 | 2.28E+05 | 2.70E+04 | 4263 | 3606 | 1590 | 413.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 100 | 3.10E+05 | 1.56E+05 | 1.08E+04 | 6399 | 0 | 796 | 0 | 0 | 0 | 408.2 | 0 | 0 | 0 | 0 | 0 |
| 7 | 90 | 5.39E+05 | 1.58E+05 | 2.88E+04 | 5673 | 3283 | 798.5 | 623.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 80 | 7.70E+05 | 2.18E+05 | 3.20E+04 | 8900 | 4527 | 1109 | 1296 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 70 | 6.83E+05 | 1.72E+05 | 2.30E+04 | 1.87E+04 | 2311 | 1685 | 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 60 | 7.12E+05 | 2.07E+05 | 2.90E+04 | 8009 | 772 | 1137 | 887.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 50 | 7.53E+05 | 2.61E+05 | 4.75E+04 | 8779 | 3557 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 40 | 5.31E+05 | 2.59E+05 | 2.07E+04 | 3489 | 0 | 869 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 30 | 5.43E+05 | 1.67E+05 | 3.31E+04 | 4624 | 1556 | 1152 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 20 | 1.06E+06 | 1.52E+05 | 2.95E+04 | 1.05E+04 | 2359 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10 | 4.37E+05 | 1.56E+05 | 2.98E+04 | 4574 | 921.4 | 698.6 | 704.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Arcata, CA

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| Approach number | Altitude (m) Begin time | Bin 1 End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 165207 | 165325 | | | | | | Number per cubic meter | | | | | | | | |
| 8 | 290 | 9.24E+04 | 2.42E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 280 | 1.83E+05 | 5.98E+04 | 1.67E+04 | 0 | 0 | 1640 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 270 | 4.78E+05 | 1.25E+05 | 2.45E+04 | 5560 | 3016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 260 | 4.00E+05 | 1.05E+05 | 2878 | 1704 | 1151 | 846.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 250 | 4.13E+05 | 1.33E+05 | 1.36E+04 | 6896 | 1551 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 240 | 5.08E+05 | 1.71E+05 | 2.13E+04 | 4614 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 230 | 4.58E+05 | 1.64E+05 | 1.47E+04 | 8701 | 0 | 1736 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 220 | 4.84E+05 | 1.46E+05 | 2.66E+04 | 5252 | 3548 | 0 | 2038 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 210 | 5.34E+05 | 1.72E+05 | 4.45E+04 | 8778 | 1188 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 200 | 8.49E+05 | 1.46E+05 | 2.97E+04 | 8795 | 1184 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 190 | 5.55E+05 | 1.71E+05 | 1.48E+04 | 6979 | 3555 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 180 | 4.54E+05 | 1.32E+05 | 3.96E+04 | 7039 | 2377 | 1748 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 170 | 5.39E+05 | 2.31E+05 | 2.99E+04 | 1.06E+04 | 2393 | 3519 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 160 | 6.33E+05 | 1.57E+05 | 2.78E+04 | 7050 | 2385 | 584.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 150 | 7.35E+05 | 1.50E+05 | 9970 | 3544 | 799.7 | 588 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 140 | 6.08E+05 | 1.66E+05 | 2.68E+04 | 1764 | 4759 | 876.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 130 | 8.78E+05 | 2.11E+05 | 2.09E+04 | 7066 | 4769 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 120 | 6.23E+05 | 1.50E+05 | 2.41E+04 | 4729 | 1593 | 585.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 110 | 6.37E+05 | 1.86E+05 | 1.20E+04 | 7120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 100 | 5.40E+05 | 1.99E+05 | 2.70E+04 | 5320 | 3594 | 880 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 90 | 6.45E+05 | 1.52E+05 | 1.01E+04 | 6036 | 1631 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 80 | 5.13E+05 | 1.56E+05 | 2.22E+04 | 4792 | 3246 | 1796 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 70 | 4.33E+05 | 1.79E+05 | 2.44E+04 | 4826 | 2444 | 2396 | 467.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 60 | 4.54E+05 | 1.28E+05 | 2.26E+04 | 9732 | 2469 | 4218 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 50 | 5.35E+05 | 1.88E+05 | 5.52E+04 | 1.21E+04 | 4084 | 1804 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 40 | 6.17E+05 | 1.76E+05 | 1.05E+04 | 7424 | 849 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 30 | 4.45E+05 | 1.62E+05 | 4.40E+04 | 8648 | 4195 | 610.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 20 | 6.47E+05 | 1.76E+05 | 1.90E+04 | 3715 | 5020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10 | 3.04E+05 | 9.64E+04 | 1.80E+04 | 3766 | 1088 | 220.1 | 299.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Arcata, CA

August 28, 1992

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| | 152008 | 152048 | | | | | | |
| 1 | 110 | | 13.2 | 11.51 | 4 | 0.11 | 5.81 | 116.151 |
| 1 | 100 | | 13.0 | 11.35 | 2 | 0.24 | 5.77 | 266.396 |
| 1 | 90 | | 13.0 | 11.35 | 2 | 0.14 | 6.11 | 141.181 |
| 1 | 80 | | 12.2 | 10.80 | 2 | 0.21 | 5.89 | 231.030 |
| 1 | 70 | | 12.2 | 10.80 | 2 | 0.15 | 5.65 | 193.016 |
| 1 | 60 | | 12.2 | 10.80 | 2 | 0.14 | 5.24 | 240.538 |
| 1 | 50 | | 11.4 | 10.28 | 2 | 0.09 | 4.87 | 176.017 |
| 1 | 40 | | 11.4 | 10.28 | 3 | 0.10 | 4.54 | 251.638 |
| 1 | 30 | | 11.1 | 10.08 | 3 | 0.08 | 5.04 | 189.304 |
| 1 | 20 | | 10.5 | 9.71 | 5 | 0.07 | 5.52 | 122.412 |
| 1 | 10 | | 10.2 | 9.54 | 14 | 0.12 | 13.89 | 042.366 |
| | 153634 | 153711 | | | | | | |
| 2 | 110 | | 13.9 | 12.00 | 1 | 0.00 | 8.23 | 001.298 |
| 2 | 100 | | 13.4 | 11.67 | 2 | 0.01 | 5.72 | 029.823 |
| 2 | 90 | | 13.0 | 11.35 | 2 | 0.07 | 5.43 | 104.336 |
| 2 | 80 | | 12.7 | 11.17 | 3 | 0.07 | 5.29 | 118.548 |
| 2 | 70 | | 12.2 | 10.80 | 2 | 0.14 | 5.23 | 216.924 |
| 2 | 60 | | 12.2 | 10.80 | 3 | 0.14 | 5.20 | 236.368 |
| 2 | 50 | | 11.4 | 10.28 | 2 | 0.10 | 4.95 | 186.627 |
| 2 | 40 | | 11.4 | 10.28 | 3 | 0.14 | 5.18 | 283.552 |
| 2 | 30 | | 11.4 | 10.28 | 3 | 0.09 | 5.45 | 165.519 |
| 2 | 20 | | 10.5 | 9.71 | 3 | 0.06 | 6.01 | 122.314 |
| 2 | 10 | | 10.5 | 9.71 | 13 | 0.12 | 12.39 | 044.841 |
| | 154746 | 154826 | | | | 154826.00 | | |
| 3 | 200 | | 15.6 | 13.31 | 2 | 0.00 | 0.88 | 000.091 |
| 3 | 190 | | 15.3 | 13.07 | 3 | 0.01 | 5.22 | 014.294 |
| 3 | 180 | | 14.7 | 12.60 | 2 | 0.17 | 5.99 | 166.110 |
| 3 | 170 | | 14.7 | 12.60 | 2 | 0.25 | 5.91 | 251.324 |
| 3 | 160 | | 14.0 | 12.07 | 8 | 0.25 | 5.65 | 303.895 |
| 3 | 150 | | 13.5 | 11.71 | 0 | 0.23 | 5.57 | 291.046 |
| 3 | 140 | | 13.0 | 11.35 | 3 | 0.20 | 5.46 | 278.136 |
| 3 | 130 | | 12.6 | 11.07 | 2 | 0.15 | 5.19 | 258.267 |
| 3 | 120 | | 12.2 | 10.80 | 2 | 0.19 | 5.53 | 268.598 |
| 3 | 110 | | 12.2 | 10.80 | 2 | 0.19 | 5.49 | 263.513 |
| 3 | 100 | | 12.2 | 10.80 | 2 | 0.12 | 4.96 | 220.460 |
| 3 | 90 | | 11.8 | 10.54 | 2 | 0.12 | 5.24 | 207.889 |
| 3 | 80 | | 11.4 | 10.28 | 1 | 0.13 | 5.32 | 213.915 |
| 3 | 70 | | 11.4 | 10.28 | 2 | 0.09 | 4.67 | 189.048 |
| 3 | 60 | | 11.4 | 10.28 | 2 | 0.10 | 4.46 | 222.369 |
| 3 | 50 | | 10.5 | 9.71 | 2 | 0.10 | 4.48 | 232.304 |
| 3 | 40 | | 10.5 | 9.71 | 4 | 0.11 | 4.83 | 230.969 |
| | 155924 | 160016 | | | | | | |
| 4 | 200 | | 14.7 | 12.60 | 2 | 0.00 | 0.88 | 000.044 |

## Arcata, CA

August 28, 1992

| Approach number | Altitude (m) *Begin time* | *End time* | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 4 | 190 | | 14.7 | 12.60 | 3 | 0.06 | 6.37 | 103.084 |
| 4 | 180 | | 14.3 | 12.30 | 2 | 0.36 | 6.42 | 302.052 |
| 4 | 170 | | 13.9 | 12.00 | 3 | 0.28 | 6.17 | 256.227 |
| 4 | 160 | | 13.4 | 11.67 | 2 | 0.31 | 6.00 | 299.693 |
| 4 | 150 | | 13.0 | 11.35 | 3 | 0.21 | 5.97 | 203.060 |
| 4 | 140 | | 13.0 | 11.35 | 2 | 0.19 | 6.21 | 176.468 |
| 4 | 130 | | 12.5 | 10.98 | 3 | 0.23 | 5.67 | 276.743 |
| 4 | 120 | | 12.2 | 10.80 | 3 | 0.18 | 5.46 | 256.586 |
| 4 | 110 | | 11.4 | 10.28 | 3 | 0.18 | 5.43 | 250.247 |
| 4 | 100 | | 11.4 | 10.28 | 3 | 0.19 | 5.47 | 269.763 |
| 4 | 90 | | 11.1 | 10.08 | 3 | 0.19 | 5.39 | 286.281 |
| 4 | 80 | | 10.5 | 9.71 | 3 | 0.15 | 4.97 | 275.890 |
| 4 | 70 | | 10.5 | 9.71 | 2 | 0.15 | 5.00 | 270.803 |
| 4 | 60 | | 10.1 | 9.47 | 2 | 0.10 | 5.27 | 177.685 |
| 4 | 50 | | 09.7 | 9.23 | 3 | 0.10 | 4.57 | 230.462 |
| 4 | 40 | | 09.7 | 9.23 | 2 | 0.08 | 4.25 | 232.438 |
| 4 | 30 | | 09.7 | 9.23 | 2 | 0.05 | 4.49 | 170.417 |
| 4 | 20 | | 09.3 | 9.00 | 6 | 0.05 | 5.31 | 118.455 |
| 4 | 10 | | 08.9 | 8.77 | 1 | 0.05 | 26.42 | 067.676 |
| | 161632 | 161736 | | | | | | |
| 5 | 230 | | 16.4 | 13.97 | 2 | 0.00 | 2.38 | 000.183 |
| 5 | 220 | | 15.6 | 13.31 | 2 | 0.12 | 6.18 | 124.645 |
| 5 | 210 | | 15.6 | 13.31 | 2 | 0.19 | 5.78 | 220.424 |
| 5 | 200 | | 15.1 | 12.95 | 4 | 0.18 | 6.03 | 190.896 |
| 5 | 190 | | 14.7 | 12.60 | 3 | 0.25 | 6.77 | 210.720 |
| 5 | 180 | | 14.2 | 12.20 | 3 | 0.24 | 6.08 | 231.959 |
| 5 | 170 | | 13.6 | 11.78 | 3 | 0.23 | 6.04 | 239.253 |
| 5 | 160 | | 13.0 | 11.35 | 2 | 0.30 | 6.35 | 274.061 |
| 5 | 150 | | 13.0 | 11.35 | 2 | 0.27 | 6.06 | 271.084 |
| 5 | 140 | | 12.6 | 11.07 | 2 | 0.19 | 5.77 | 221.827 |
| 5 | 130 | | 12.2 | 10.80 | 3 | 0.25 | 5.92 | 276.365 |
| 5 | 120 | | 11.7 | 10.45 | 3 | 0.22 | 5.72 | 270.289 |
| 5 | 110 | | 11.4 | 10.28 | 5 | 0.24 | 5.70 | 290.771 |
| 5 | 100 | | 11.1 | 10.08 | 3 | 0.22 | 5.86 | 263.331 |
| 5 | 90 | | 10.5 | 9.71 | 3 | 0.20 | 5.64 | 270.912 |
| 5 | 80 | | 10.5 | 9.71 | 2 | 0.12 | 5.24 | 207.128 |
| 5 | 70 | | 10.5 | 9.71 | 2 | 0.17 | 5.01 | 318.270 |
| 5 | 60 | | 10.1 | 9.47 | 2 | 0.16 | 5.42 | 247.114 |
| 5 | 50 | | 10.1 | 9.47 | 2 | 0.13 | 5.62 | 189.899 |
| 5 | 40 | | 09.7 | 9.23 | 2 | 0.05 | 4.18 | 164.009 |
| 5 | 30 | | 09.7 | 9.23 | 2 | 0.05 | 4.71 | 129.057 |
| 5 | 20 | | 09.7 | 9.23 | 2 | 0.05 | 5.25 | 139.398 |
| 5 | 10 | | 09.5 | 9.12 | 9 | 0.02 | 7.66 | 030.759 |
| | 162755 | 162907 | | | | | | |

## Arcata, CA

August 28, 1992

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 6 | 260 | | 16.4 | 13.97 | 1 | 0.00 | 0.88 | 000.171 |
| 6 | 250 | | 16.7 | 14.20 | 3 | 0.16 | 6.92 | 119.013 |
| 6 | 240 | | 16.4 | 13.97 | 2 | 0.25 | 7.50 | 151.012 |
| 6 | 230 | | 16.1 | 13.75 | 3 | 0.53 | 7.19 | 347.217 |
| 6 | 220 | | 15.6 | 13.31 | 2 | 0.56 | 6.99 | 398.378 |
| 6 | 210 | | 15.3 | 13.07 | 3 | 0.51 | 7.12 | 343.696 |
| 6 | 200 | | 14.7 | 12.60 | 2 | 0.44 | 7.09 | 303.450 |
| 6 | 190 | | 14.7 | 12.60 | 2 | 0.48 | 7.12 | 319.563 |
| 6 | 180 | | 13.9 | 12.00 | 3 | 0.47 | 7.06 | 336.681 |
| 6 | 170 | | 13.6 | 11.78 | 3 | 0.43 | 6.45 | 373.583 |
| 6 | 160 | | 13.0 | 11.35 | 3 | 0.39 | 7.12 | 277.600 |
| 6 | 150 | | 12.7 | 11.17 | 3 | 0.41 | 6.95 | 322.806 |
| 6 | 140 | | 12.2 | 10.80 | 2 | 0.41 | 7.08 | 310.291 |
| 6 | 130 | | 12.2 | 10.80 | 2 | 0.40 | 7.26 | 304.993 |
| 6 | 120 | | 12.2 | 10.80 | 2 | 0.30 | 6.13 | 333.846 |
| 6 | 110 | | 11.7 | 10.45 | 3 | 0.36 | 6.94 | 301.023 |
| 6 | 100 | | 11.4 | 10.28 | 2 | 0.23 | 6.08 | 273.811 |
| 6 | 90 | | 11.4 | 10.28 | 2 | 0.27 | 6.53 | 314.570 |
| 6 | 80 | | 11.4 | 10.28 | 2 | 0.25 | 5.68 | 362.965 |
| 6 | 70 | | 10.5 | 9.71 | 3 | 0.16 | 4.77 | 319.982 |
| 6 | 60 | | 10.5 | 9.71 | 3 | 0.17 | 5.79 | 254.585 |
| 6 | 50 | | 10.5 | 9.71 | 3 | 0.13 | 4.48 | 322.414 |
| 6 | 40 | | 10.2 | 9.55 | 3 | 0.11 | 5.25 | 255.054 |
| 6 | 30 | | 09.7 | 9.23 | 3 | 0.14 | 6.35 | 264.262 |
| 6 | 20 | | 09.7 | 9.23 | 6 | 0.12 | 8.20 | 141.820 |
| 6 | 10 | | 09.5 | 9.10 | 7 | 0.02 | 7.53 | 026.348 |
| | 163940 | 164048 | | | | | | |
| 7 | 290 | | 17.2 | 14.66 | 1 | 0.00 | 0.88 | 000.088 |
| 7 | 280 | | 17.2 | 14.66 | 2 | 0.00 | 0.88 | 000.174 |
| 7 | 270 | | 17.2 | 14.66 | 2 | 0.03 | 6.82 | 024.801 |
| 7 | 260 | | 16.4 | 13.97 | 2 | 0.37 | 7.27 | 230.830 |
| 7 | 250 | | 16.4 | 13.97 | 3 | 0.24 | 7.39 | 146.502 |
| 7 | 240 | | 15.6 | 13.31 | 2 | 0.53 | 7.19 | 331.439 |
| 7 | 230 | | 15.6 | 13.31 | 2 | 0.48 | 7.19 | 317.935 |
| 7 | 220 | | 15.0 | 12.84 | 3 | 0.36 | 7.44 | 221.305 |
| 7 | 210 | | 14.7 | 12.60 | 2 | 0.51 | 6.67 | 416.439 |
| 7 | 200 | | 14.3 | 12.30 | 2 | 0.51 | 6.39 | 429.254 |
| 7 | 190 | | 13.9 | 12.00 | 2 | 0.51 | 6.50 | 426.749 |
| 7 | 180 | | 13.9 | 12.00 | 2 | 0.49 | 6.80 | 395.799 |
| 7 | 170 | | 13.9 | 12.00 | 1 | 0.49 | 6.60 | 422.616 |
| 7 | 160 | | 13.0 | 11.35 | 3 | 0.46 | 6.63 | 406.379 |
| 7 | 150 | | 13.0 | 11.35 | 2 | 0.43 | 5.97 | 447.285 |
| 7 | 140 | | 12.6 | 11.07 | 2 | 0.39 | 6.47 | 388.518 |
| 7 | 130 | | 12.2 | 10.80 | 1 | 0.37 | 5.94 | 442.373 |

## Arcata, CA

August 28, 1992

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 7 | 120 | | 12.2 | 10.80 | 2 | 0.39 | 6.60 | 374.945 |
| 7 | 110 | | 12.2 | 10.80 | 3 | 0.35 | 6.50 | 378.486 |
| 7 | 100 | | 11.4 | 10.28 | 2 | 0.25 | 5.48 | 388.028 |
| 7 | 90 | | 11.4 | 10.28 | 4 | 0.30 | 5.63 | 420.657 |
| 7 | 80 | | 11.4 | 10.28 | 3 | 0.32 | 6.36 | 369.763 |
| 7 | 70 | | 10.9 | 9.99 | 2 | 0.28 | 6.08 | 391.752 |
| 7 | 60 | | 10.5 | 9.71 | 3 | 0.22 | 5.71 | 347.473 |
| 7 | 50 | | 10.5 | 9.71 | 2 | 0.19 | 5.73 | 325.983 |
| 7 | 40 | | 10.5 | 9.71 | 2 | 0.12 | 5.36 | 236.892 |
| 7 | 30 | | 10.5 | 9.71 | 3 | 0.13 | 6.77 | 228.333 |
| 7 | 20 | | 10.5 | 9.71 | 1 | 0.09 | 6.43 | 159.332 |
| 7 | 10 | | 10.2 | 9.53 | 8 | 0.04 | 8.35 | 039.594 |
| | 165207 | 165325 | | | | | | |
| 8 | 290 | | 17.2 | 14.66 | 1 | 0.18 | 7.03 | 134.366 |
| 8 | 280 | | 17.2 | 14.66 | 1 | 0.29 | 6.62 | 237.229 |
| 8 | 270 | | 16.4 | 13.97 | 3 | 0.57 | 6.58 | 460.136 |
| 8 | 260 | | 16.4 | 13.97 | 2 | 0.55 | 6.87 | 387.718 |
| 8 | 250 | | 15.6 | 13.31 | 3 | 0.57 | 6.50 | 440.316 |
| 8 | 240 | | 15.6 | 13.31 | 3 | 0.48 | 6.41 | 387.510 |
| 8 | 230 | | 14.7 | 12.60 | 2 | 0.47 | 5.96 | 437.226 |
| 8 | 220 | | 14.7 | 12.60 | 2 | 0.51 | 6.29 | 428.233 |
| 8 | 210 | | 14.3 | 12.30 | 2 | 0.48 | 6.27 | 428.429 |
| 8 | 200 | | 13.9 | 12.00 | 2 | 0.44 | 6.32 | 393.602 |
| 8 | 190 | | 13.9 | 12.00 | 2 | 0.40 | 6.24 | 357.309 |
| 8 | 180 | | 13.3 | 11.57 | 3 | 0.40 | 6.21 | 356.534 |
| 8 | 170 | | 13.0 | 11.35 | 1 | 0.40 | 6.12 | 368.740 |
| 8 | 160 | | 12.7 | 11.17 | 3 | 0.36 | 5.91 | 384.263 |
| 8 | 150 | | 12.2 | 10.80 | 3 | 0.30 | 5.70 | 366.298 |
| 8 | 140 | | 12.2 | 10.80 | 2 | 0.32 | 5.75 | 393.200 |
| 8 | 130 | | 11.4 | 10.28 | 2 | 0.32 | 5.96 | 361.711 |
| 8 | 120 | | 11.4 | 10.28 | 3 | 0.18 | 5.38 | 292.623 |
| 8 | 110 | | 11.4 | 10.28 | 2 | 0.23 | 5.26 | 373.730 |
| 8 | 100 | | 11.4 | 10.28 | 2 | 0.20 | 5.65 | 308.158 |
| 8 | 90 | | 10.5 | 9.71 | 3 | 0.16 | 4.67 | 332.818 |
| 8 | 80 | | 10.5 | 9.71 | 3 | 0.15 | 4.53 | 347.654 |
| 8 | 70 | | 10.5 | 9.71 | 3 | 0.14 | 4.63 | 318.314 |
| 8 | 60 | | 10.5 | 9.71 | 3 | 0.16 | 4.50 | 372.523 |
| 8 | 50 | | 10.5 | 9.71 | 3 | 0.12 | 4.54 | 293.446 |
| 8 | 40 | | 10.0 | 9.39 | 3 | 0.08 | 5.35 | 167.905 |
| 8 | 30 | | 09.7 | 9.23 | 3 | 0.05 | 4.67 | 188.967 |
| 8 | 20 | | 09.7 | 9.23 | 2 | 0.03 | 4.98 | 120.361 |
| 8 | 10 | | 09.9 | 9.36 | 11 | 0.01 | 15.08 | 008.504 |

## Arcata, CA

August 28, 1992

Number per cubic meter

Size: 3 microns Range: 2-47 microns

| Approach number | Altitude (m) Begin time | Bin 1 End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 181556 | 181716 | | | | | | | | | | | | | | |
| 9 | 330 | 7.54E+04 | 7.54E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 320 | 1.13E+05 | 7.52E+04 | 7.51E+04 | 3.75E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 310 | 1.98E+07 | 2.41E+07 | 5.41E+07 | 7.56E+07 | 1.97E+07 | 4.27E+06 | 7.15E+05 | 1.52E+05 | 2.15E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 300 | 4.01E+07 | 3.96E+07 | 1.37E+08 | 2.01E+08 | 4.87E+07 | 1.46E+07 | 2.88E+06 | 3.91E+05 | 1.94E+05 | 6.47E+04 | 0 | 0 | 0 | 0 | 0 |
| 9 | 290 | 4.00E+07 | 4.25E+07 | 1.30E+08 | 1.85E+08 | 4.44E+07 | 1.43E+07 | 2.83E+06 | 5.27E+05 | 6.79E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 280 | 3.48E+07 | 3.84E+07 | 1.27E+08 | 1.66E+08 | 4.37E+07 | 1.40E+07 | 3.16E+06 | 5.11E+05 | 2.23E+05 | 4.49E+04 | 0 | 0 | 0 | 0 | 0 |
| 9 | 270 | 5.24E+07 | 7.03E+07 | 1.23E+08 | 1.18E+08 | 2.66E+07 | 7.96E+06 | 1.70E+06 | 3.40E+05 | 1.36E+05 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 260 | 5.18E+07 | 8.78E+07 | 2.06E+08 | 1.30E+08 | 3.19E+07 | 8.30E+06 | 1.39E+06 | 2.37E+05 | 3.40E+04 | 1.02E+05 | 0 | 0 | 0 | 0 | 0 |
| 9 | 250 | 5.26E+07 | 8.46E+07 | 2.52E+08 | 1.54E+08 | 3.95E+07 | 9.12E+06 | 1.70E+06 | 4.99E+05 | 6.66E+04 | 3.33E+04 | 0 | 0 | 0 | 0 | 0 |
| 9 | 240 | 4.56E+07 | 7.36E+07 | 1.76E+08 | 1.52E+08 | 3.94E+07 | 1.20E+07 | 2.70E+06 | 6.16E+05 | 3.40E+04 | 3.40E+04 | 0 | 0 | 0 | 0 | 0 |
| 9 | 230 | 4.02E+07 | 7.79E+07 | 1.78E+08 | 1.32E+08 | 3.42E+07 | 9.84E+06 | 2.12E+06 | 4.52E+05 | 3.47E+04 | 6.95E+04 | 6.95E+04 | 0 | 0 | 0 | 0 |
| 9 | 220 | 4.13E+07 | 9.86E+07 | 1.79E+08 | 8.67E+07 | 1.67E+07 | 2.61E+06 | 2.74E+05 | 4.63E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 210 | 4.35E+07 | 9.47E+07 | 1.89E+08 | 1.16E+08 | 2.94E+07 | 6.69E+06 | 1.09E+06 | 0 | 1.06E+05 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 200 | 3.42E+07 | 8.23E+07 | 1.53E+08 | 8.77E+07 | 2.23E+07 | 4.73E+06 | 6.27E+05 | 9.27E+04 | 0 | 0 | 0 | 2.30E+04 | 0 | 0 | 0 |
| 9 | 190 | 3.70E+07 | 9.00E+07 | 1.70E+08 | 9.80E+07 | 1.97E+07 | 3.68E+06 | 5.77E+05 | 1.44E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 180 | 3.58E+07 | 9.68E+07 | 2.12E+08 | 9.95E+07 | 1.82E+07 | 3.71E+06 | 6.01E+05 | 3.52E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 170 | 4.24E+07 | 1.27E+08 | 2.30E+08 | 7.39E+07 | 1.49E+07 | 2.28E+06 | 1.88E+05 | 0 | 0 | 2.36E+04 | 0 | 0 | 0 | 0 | 0 |
| 9 | 160 | 4.08E+07 | 1.45E+08 | 2.22E+08 | 6.88E+07 | 1.38E+07 | 3.06E+06 | 4.09E+05 | 7.20E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 150 | 3.91E+07 | 1.22E+08 | 1.59E+08 | 6.02E+07 | 1.11E+07 | 1.65E+06 | 2.16E+05 | 3.60E+04 | 3.58E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 140 | 3.56E+07 | 9.62E+07 | 1.30E+08 | 5.82E+07 | 1.13E+07 | 2.45E+06 | 3.93E+05 | 7.28E+04 | 4.93E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 130 | 3.34E+07 | 1.02E+08 | 1.17E+08 | 4.51E+07 | 5.70E+06 | 7.04E+05 | 9.81E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 120 | 6.48E+07 | 1.80E+08 | 1.04E+08 | 2.38E+07 | 2.98E+06 | 2.24E+05 | 3.74E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 110 | 5.23E+07 | 1.63E+08 | 9.38E+07 | 2.07E+07 | 1.84E+06 | 4.28E+05 | 2.52E+04 | 0 | 0 | 0 | 0 | 2.51E+04 | 0 | 0 | 0 |
| 9 | 100 | 1.77E+08 | 2.12E+08 | 6.31E+07 | 1.01E+07 | 8.25E+05 | 1.54E+05 | 2.55E+04 | 0 | 0 | 0 | 0 | 2.55E+04 | 0 | 0 | 0 |
| 9 | 90 | 1.00E+08 | 1.94E+08 | 8.24E+07 | 1.46E+07 | 2.13E+06 | 5.33E+05 | 7.55E+04 | 7.63E+04 | 2.56E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 80 | 6.93E+07 | 1.28E+08 | 5.51E+07 | 1.31E+07 | 1.96E+06 | 1.49E+05 | 4.99E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 70 | 6.03E+07 | 6.91E+07 | 2.48E+07 | 5.75E+06 | 1.00E+06 | 1.70E+05 | 9.43E+04 | 0 | 1.90E+04 | 0 | 0 | 0 | 0 | 0 | 1.89E+04 |
| 9 | 60 | 1.57E+07 | 3.08E+07 | 1.90E+07 | 6.22E+06 | 1.03E+06 | 2.52E+05 | 1.42E+05 | 7.20E+04 | 0 | 0 | 0 | 0 | 3.51E+04 | 0 | 0 |
| 9 | 50 | 8.21E+06 | 1.66E+07 | 1.25E+07 | 3.67E+06 | 1.09E+06 | 4.59E+05 | 3.50E+04 | 0 | 3.58E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 40 | 1.32E+06 | 1.95E+06 | 1.27E+06 | 6.15E+05 | 3.10E+05 | 4.15E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 30 | 5.35E+05 | 5.54E+05 | 3.15E+05 | 1.00E+05 | 2.52E+04 | 1.30E+04 | 0 | 9344 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 182730 | 182900 | | | | | | | | | | | | | | |
| 10 | 370 | 8.03E+04 | 0 | 8.03E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 360 | 7.99E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 350 | 7.92E+04 | 3.97E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 340 | 7.91E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 330 | 1.99E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 320 | 8.34E+06 | 1.05E+07 | 3.42E+07 | 4.09E+07 | 9.66E+06 | 2.82E+06 | 2.87E+05 | 4.38E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 310 | 2.90E+07 | 3.44E+07 | 9.51E+07 | 1.28E+08 | 3.48E+07 | 9.79E+06 | 2.19E+06 | 2.71E+05 | 4.49E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 300 | 4.22E+07 | 5.99E+07 | 1.63E+08 | 1.54E+08 | 3.88E+07 | 1.11E+07 | 1.97E+06 | 4.41E+05 | 1.02E+05 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 290 | 2.86E+07 | 4.56E+07 | 1.05E+08 | 8.24E+07 | 2.13E+07 | 5.08E+06 | 8.20E+05 | 1.02E+05 | 3.40E+04 | 6.81E+04 | 0 | 0 | 0 | 0 | 0 |
| 10 | 280 | 4.48E+07 | 7.20E+07 | 1.87E+08 | 1.44E+08 | 3.77E+07 | 1.05E+07 | 1.50E+06 | 2.99E+05 | 3.30E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 270 | 5.73E+07 | 9.68E+07 | 2.79E+08 | 1.60E+08 | 3.91E+07 | 1.05E+07 | 1.87E+06 | 3.67E+05 | 6.66E+04 | 0 | 0 | 3.36E+04 | 0 | 0 | 0 |
| 10 | 260 | 5.43E+07 | 8.78E+07 | 2.30E+08 | 1.62E+08 | 4.33E+07 | 1.09E+07 | 2.84E+06 | 3.01E+05 | 6.64E+04 | 3.36E+04 | 3.32E+04 | 0 | 0 | 3.36E+04 | 0 |
| 10 | 250 | 6.03E+07 | 1.15E+08 | 2.81E+08 | 1.40E+08 | 3.50E+07 | 7.71E+06 | 1.04E+06 | 6.82E+04 | 0 | 3.28E+04 | 0 | 0 | 0 | 0 | 0 |
| 10 | 240 | 6.35E+07 | 1.64E+08 | 3.20E+08 | 1.14E+08 | 2.71E+07 | 4.14E+06 | 5.84E+05 | 4.59E+04 | 4.52E+04 | 0 | 2.30E+04 | 0 | 2.30E+04 | 0 | 0 |
| 10 | 230 | 6.00E+07 | 1.19E+08 | 2.70E+08 | 1.35E+08 | 3.27E+07 | 7.62E+06 | 1.44E+06 | 4.10E+05 | 2.26E+04 | 4.55E+04 | 2.25E+04 | 0 | 0 | 0 | 0 |

## Arcata, CA

August 28, 1992

| Approach number | Altitude (m) *Begin time* | Bin 1 *End time* | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Number per cubic meter | | | | | | | | |
| 10 | 220 | 4.97E+07 | 9.69E+07 | 2.15E+08 | 1.33E+08 | 3.24E+07 | 7.63E+06 | 1.41E+06 | 4.04E+05 | 0 | 3.37E+04 | 0 | 0 | 0 | 0 | 0 |
| 10 | 210 | 4.82E+07 | 1.14E+08 | 1.83E+08 | 9.32E+07 | 2.02E+07 | 4.96E+06 | 9.74E+05 | 3.69E+05 | 6.76E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 200 | 6.01E+07 | 1.75E+08 | 3.08E+08 | 7.91E+07 | 1.85E+07 | 1.98E+06 | 1.00E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 190 | 6.39E+07 | 1.75E+08 | 2.71E+08 | 7.43E+07 | 1.68E+07 | 4.69E+06 | 7.94E+05 | 3.45E+05 | 1.04E+05 | 3.45E+04 | 0 | 0 | 0 | 0 | 0 |
| 10 | 180 | 5.64E+07 | 1.60E+08 | 2.22E+08 | 7.66E+07 | 1.83E+07 | 4.19E+06 | 9.67E+05 | 3.69E+05 | 6.93E+04 | 0 | 2.28E+04 | 0 | 0 | 0 | 0 |
| 10 | 170 | 5.26E+07 | 1.37E+08 | 1.68E+08 | 7.21E+07 | 1.83E+07 | 3.39E+06 | 6.22E+05 | 0 | 0 | 6.92E+04 | 0 | 0 | 0 | 0 | 0 |
| 10 | 160 | 4.18E+07 | 1.14E+08 | 1.48E+08 | 7.21E+07 | 1.98E+07 | 6.43E+06 | 1.75E+06 | 6.21E+05 | 1.38E+05 | 0 | 2.31E+04 | 0 | 0 | 0 | 0 |
| 10 | 150 | 3.68E+07 | 8.83E+07 | 9.74E+07 | 4.02E+07 | 8.45E+06 | 1.50E+06 | 2.44E+05 | 1.40E+05 | 6.98E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 140 | 4.09E+07 | 1.19E+08 | 1.32E+08 | 5.15E+07 | 1.11E+07 | 3.57E+06 | 9.11E+05 | 1.40E+05 | 7.01E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 130 | 6.64E+07 | 1.36E+08 | 1.01E+08 | 3.56E+07 | 5.60E+06 | 8.44E+05 | 4.81E+04 | 2.45E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 120 | 5.33E+07 | 1.11E+08 | 5.86E+07 | 1.36E+07 | 2.54E+06 | 5.42E+05 | 4.96E+04 | 0 | 2.48E+04 | 2.45E+04 | 0 | 0 | 0 | 0 | 0 |
| 10 | 110 | 2.58E+07 | 1.21E+07 | 1.58E+06 | 4.76E+05 | 1.19E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 100 | 2.38E+07 | 1.59E+07 | 4.23E+06 | 1.38E+06 | 5.43E+05 | 2.34E+04 | 2.34E+04 | 2.34E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 90 | 4.55E+05 | 4.74E+05 | 4.12E+05 | 6.65E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 80 | 1.24E+06 | 1.04E+06 | 5.19E+05 | 1.74E+05 | 4.34E+04 | 0 | 4.34E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 70 | 5.36E+06 | 3.54E+06 | 1.27E+06 | 2.79E+05 | 7.30E+04 | 0 | 2.32E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 60 | 6.89E+05 | 1.72E+05 | 2.15E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 50 | 6.36E+05 | 2.55E+05 | 8.45E+04 | 4.26E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 40 | 4.06E+05 | 2.38E+05 | 6.50E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 30 | 6.61E+05 | 6.42E+05 | 1.40E+05 | 1.55E+05 | 4.67E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 20 | 5.59E+05 | 3.35E+05 | 2.51E+05 | 8.38E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 10 | 4.86E+05 | 4.24E+05 | 2.73E+05 | 5.81E+04 | 2.57E+04 | 1.83E+04 | 9169 | 9358 | 2.93E+04 | 0 | 9358 | 0 | 9169 | 0 | 0 |



C-2

## Arcata, CA

August 28, 1992

Number per cubic meter

Size: 20 microns Range: 10-310 microns

| Approach number | Altitude Begin time | Bin 1 End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 181556 | 181716 | | | | | | | | | | | | | | |
| 9 | 330 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 320 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 310 | 4.11E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 300 | 1.04E+05 | 3.26E+04 | 0 | 1496 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 290 | 1.56E+05 | 1.85E+04 | 5170 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 342.3 | 0 | 0 |
| 9 | 280 | 7.02E+04 | 3.32E+04 | 1721 | 1014 | 688.3 | 0 | 395 | 321 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 270 | 4.17E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 955.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 260 | 6.31E+04 | 1.66E+04 | 7706 | 3056 | 0 | 0 | 0 | 483.9 | 1226 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 250 | 1.47E+05 | 3.30E+04 | 7715 | 1524 | 1030 | 0 | 0 | 963.5 | 1635 | 388.7 | 0 | 0 | 0 | 0 | 0 |
| 9 | 240 | 2.34E+05 | 1.12E+04 | 0 | 1538 | 0 | 0 | 1193 | 488.3 | 1651 | 393.1 | 0 | 0 | 0 | 0 | 0 |
| 9 | 230 | 2.36E+05 | 1.13E+04 | 5250 | 0 | 0 | 0 | 0 | 0 | 2489 | 397.1 | 0 | 0 | 0 | 0 | 0 |
| 9 | 220 | 7.22E+04 | 3800 | 1773 | 1039 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 210 | 1.31E+05 | 4.00E+04 | 1.07E+04 | 0 | 0 | 0 | 0 | 998.9 | 847 | 403.7 | 0 | 0 | 0 | 0 | 0 |
| 9 | 200 | 2.95E+04 | 1.93E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 190 | 4.46E+04 | 2.92E+04 | 2721 | 0 | 0 | 0 | 0 | 512 | 0 | 826.5 | 446.2 | 0 | 0 | 0 | 0 |
| 9 | 180 | 1.78E+05 | 2.92E+04 | 5446 | 0 | 0 | 0 | 627 | 0 | 864.4 | 0 | 445.1 | 0 | 0 | 0 | 0 |
| 9 | 170 | 2.97E+04 | 3.11E+04 | 7282 | 1084 | 0 | 0 | 0 | 0 | 1162 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 160 | 1.05E+05 | 1.18E+04 | 1.10E+04 | 0 | 734.7 | 1087 | 0 | 0 | 584.9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 150 | 3.16E+05 | 4.14E+04 | 0 | 0 | 0 | 0 | 633 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 140 | 1.52E+05 | 4.77E+04 | 3728 | 3280 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 130 | 1.38E+05 | 2.81E+04 | 1876 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 120 | 9.19E+04 | 1.81E+04 | 2816 | 1662 | 0 | 828 | 0 | 528 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 110 | 1.08E+05 | 1.61E+04 | 7513 | 0 | 2256 | 553.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 100 | 3.13E+04 | 1.63E+04 | 3753 | 0 | 755.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 90 | 6.12E+04 | 2.80E+04 | 5601 | 3306 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 80 | 6.11E+04 | 2.00E+04 | 3723 | 1102 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 70 | 7.97E+04 | 2.99E+04 | 6982 | 821.2 | 1114 | 408 | 642.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 60 | 1.12E+05 | 5.88E+04 | 0 | 0 | 0 | 0 | 0 | 514 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 50 | 1.58E+05 | 8.26E+04 | 1.38E+04 | 4889 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 40 | 5.97E+04 | 3.52E+04 | 7300 | 0 | 730 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 30 | 1.91E+04 | 6653 | 780.4 | 0 | 309.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 182730 | 182900 | | | | | | | | | | | | | | |
| 10 | 370 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 360 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 350 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 340 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 330 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 320 | 1.43E+04 | 7500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 310 | 1.44E+04 | 1.13E+04 | 1756 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 300 | 6.37E+04 | 2.78E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 290 | 6.33E+04 | 2.21E+04 | 0 | 0 | 0 | 756 | 0 | 0 | 407.9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 280 | 4.18E+04 | 1.65E+04 | 1.02E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 270 | 1.05E+05 | 2.21E+04 | 2576 | 1525 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 260 | 1.70E+05 | 2.77E+04 | 1.29E+04 | 1530 | 1037 | 0 | 0 | 0 | 411.4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 250 | 6.36E+04 | 0 | 2589 | 1533 | 0 | 0 | 594.5 | 485.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 240 | 0 | 1.11E+04 | 0 | 1004 | 0 | 509 | 0 | 0 | 274.7 | 0 | 561.7 | 0 | 0 | 0 | 0 |

## Arcata, CA

August 28, 1992

| Approach number | Altitude Begin time | Bin 1 End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Number per cubic meter | | | | | | | | |
| 10 | 230 | 0 | 2.98E+04 | 1732 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 341.3 | 0 | 0 |
| 10 | 220 | 1.06E+05 | 3.34E+04 | 0 | 1537 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 210 | 1.06E+05 | 1.66E+04 | 0 | 0 | 0 | 0 | 0 | 485.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 200 | 4.19E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 190 | 1.06E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 180 | 1.42E+04 | 1.49E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 170 | 1.29E+05 | 7.88E+04 | 5256 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 160 | 1.31E+05 | 3.04E+04 | 7101 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 150 | 8.76E+04 | 1.15E+04 | 5350 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 140 | 1.10E+05 | 1.16E+04 | 5391 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 130 | 4.44E+04 | 2.34E+04 | 1814 | 0 | 729.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 120 | 1.05E+05 | 1.58E+04 | 1828 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 110 | 2.28E+04 | 5950 | 2776 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 100 | 6.08E+04 | 7960 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 80 | 2.35E+04 | 6165 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 70 | 7.80E+04 | 6.11E+04 | 7573 | 0 | 763 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 50 | 2.29E+04 | 0 | 2798 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 40 | 0 | 4037 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 30 | 2.28E+04 | 0 | 5587 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 20 | 0 | 7927 | 0 | 0 | 0 | 545 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 10 | 2.03E+04 | 1.47E+04 | 5597 | 2232 | 255 | 551.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Arcata, CA

August 28, 1992

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| | 181556 | 181716 | | | | | | |
| 9 | 330 | | 18.1 | 15.47 | 1 | 0.000 | 2.4 | 000.151 |
| 9 | 320 | | 18.1 | 15.47 | 2 | 0.000 | 4.6 | 000.301 |
| 9 | 310 | | 17.8 | 15.19 | 3 | 0.163 | 5.8 | 198.453 |
| 9 | 300 | | 17.2 | 14.66 | 2 | 0.439 | 5.9 | 484.463 |
| 9 | 290 | | 17.2 | 14.66 | 3 | 0.411 | 5.9 | 459.085 |
| 9 | 280 | | 16.7 | 14.20 | 3 | 0.390 | 5.9 | 427.076 |
| 9 | 270 | | 16.4 | 13.97 | 1 | 0.281 | 5.7 | 400.724 |
| 9 | 260 | | 16.0 | 13.64 | 2 | 0.346 | 5.5 | 517.227 |
| 9 | 250 | | 15.6 | 13.31 | 2 | 0.416 | 5.5 | 594.194 |
| 9 | 240 | | 15.6 | 13.31 | 2 | 0.392 | 5.8 | 502.217 |
| 9 | 230 | | 14.7 | 12.60 | 2 | 0.354 | 5.7 | 475.240 |
| 9 | 220 | | 14.4 | 12.40 | 3 | 0.227 | 5.1 | 424.681 |
| 9 | 210 | | 13.9 | 12.00 | 2 | 0.312 | 5.5 | 480.155 |
| 9 | 200 | | 13.9 | 12.00 | 3 | 0.235 | 5.4 | 384.905 |
| 9 | 190 | | 13.0 | 11.35 | 2 | 0.253 | 5.3 | 419.395 |
| 9 | 180 | | 13.0 | 11.35 | 2 | 0.270 | 5.1 | 467.078 |
| 9 | 170 | | 12.7 | 11.17 | 3 | 0.241 | 4.7 | 491.012 |
| 9 | 160 | | 12.2 | 10.80 | 3 | 0.236 | 4.7 | 494.062 |
| 9 | 150 | | 12.2 | 10.80 | 2 | 0.181 | 4.8 | 393.221 |
| 9 | 140 | | 11.4 | 10.28 | 3 | 0.167 | 5.0 | 334.614 |
| 9 | 130 | | 11.4 | 10.28 | 3 | 0.128 | 4.6 | 304.494 |
| 9 | 120 | | 11.4 | 10.28 | 2 | 0.108 | 4.1 | 375.304 |
| 9 | 110 | | 10.8 | 9.89 | 3 | 0.096 | 4.1 | 332.011 |
| 9 | 100 | | 10.5 | 9.71 | 3 | 0.077 | 3.5 | 462.654 |
| 9 | 90 | | 10.5 | 9.71 | 3 | 0.091 | 3.9 | 394.120 |
| 9 | 80 | | 10.5 | 9.71 | 3 | 0.063 | 4.0 | 267.941 |
| 9 | 70 | | 9.9 | 9.35 | 4 | 0.035 | 4.1 | 161.356 |
| 9 | 60 | | 9.7 | 9.23 | 2 | 0.026 | 4.7 | 073.229 |
| 9 | 50 | | 9.7 | 9.23 | 2 | 0.019 | 5.3 | 042.579 |
| 9 | 40 | | 9.7 | 9.23 | 3 | 0.003 | 6.8 | 005.515 |
| 9 | 30 | | 9.5 | 9.10 | 7 | 0.001 | 7.5 | 001.554 |
| | 182730 | 182900 | | | | | | |
| 10 | 370 | | 18.9 | 16.22 | 1 | 0.000 | 4.0 | 000.161 |
| 10 | 360 | | 18.9 | 16.22 | 2 | 0.000 | 0.9 | 000.080 |
| 10 | 350 | | 18.9 | 16.22 | 2 | 0.000 | 2.3 | 000.119 |
| 10 | 340 | | 18.9 | 16.22 | 2 | 0.000 | 0.9 | 000.079 |
| 10 | 330 | | 18.1 | 15.47 | 2 | 0.000 | 0.9 | 000.199 |
| 10 | 320 | | 18.1 | 15.47 | 3 | 0.089 | 5.7 | 106.767 |
| 10 | 310 | | 18.1 | 15.47 | 3 | 0.293 | 5.9 | 333.120 |
| 10 | 300 | | 17.6 | 15.06 | 2 | 0.367 | 5.7 | 471.593 |
| 10 | 290 | | 17.2 | 14.66 | 2 | 0.205 | 5.6 | 288.848 |
| 10 | 280 | | 16.8 | 14.31 | 2 | 0.362 | 5.6 | 497.459 |
| 10 | 270 | | 16.4 | 13.97 | 2 | 0.430 | 5.4 | 645.451 |

## Arcata, CA

August 28, 1992

| Approach number | Altitude (m) *Begin time* | *End time* | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 10 | 260 | | 16.4 | 13.97 | 2 | 0.428 | 5.6 | 592.101 |
| 10 | 250 | | 15.6 | 13.31 | 2 | 0.390 | 5.3 | 639.935 |
| 10 | 240 | | 15.3 | 13.07 | 3 | 0.362 | 4.9 | 693.842 |
| 10 | 230 | | 14.7 | 12.60 | 3 | 0.382 | 5.3 | 625.459 |
| 10 | 220 | | 14.3 | 12.30 | 2 | 0.347 | 5.4 | 535.608 |
| 10 | 210 | | 13.9 | 12.00 | 2 | 0.260 | 5.2 | 464.464 |
| 10 | 200 | | 13.9 | 12.00 | 2 | 0.289 | 4.5 | 643.185 |
| 10 | 190 | | 13.0 | 11.35 | 2 | 0.281 | 4.7 | 607.180 |
| 10 | 180 | | 13.0 | 11.35 | 3 | 0.261 | 4.9 | 539.048 |
| 10 | 170 | | 13.0 | 11.35 | 1 | 0.222 | 5.0 | 451.515 |
| 10 | 160 | | 12.5 | 10.98 | 3 | 0.234 | 5.4 | 404.474 |
| 10 | 150 | | 12.2 | 10.80 | 2 | 0.123 | 4.9 | 273.054 |
| 10 | 140 | | 12.2 | 10.80 | 2 | 0.171 | 5.0 | 359.071 |
| 10 | 130 | | 12.2 | 10.80 | 3 | 0.118 | 4.5 | 345.178 |
| 10 | 120 | | 11.4 | 10.28 | 3 | 0.065 | 4.1 | 239.444 |
| 10 | 110 | | 11.4 | 10.28 | 2 | 0.004 | 3.0 | 040.040 |
| 10 | 100 | | 11.4 | 10.28 | 3 | 0.008 | 4.0 | 045.973 |
| 10 | 90 | | 11.4 | 10.28 | 2 | 0.000 | 4.0 | 001.407 |
| 10 | 80 | | 11.4 | 10.28 | 2 | 0.001 | 5.1 | 003.060 |
| 10 | 70 | | 10.8 | 9.89 | 3 | 0.003 | 6.4 | 010.550 |
| 10 | 60 | | 10.5 | 9.71 | 2 | 0.000 | 3.7 | 001.076 |
| 10 | 50 | | 10.5 | 9.71 | 2 | 0.000 | 24.9 | 001.021 |
| 10 | 40 | | 10.5 | 9.71 | 3 | 0.000 | 2.9 | 000.709 |
| 10 | 30 | | 10.5 | 9.71 | 2 | 0.001 | 24.0 | 001.649 |
| 10 | 20 | | 10.5 | 9.71 | 3 | 0.001 | 52.4 | 001.229 |
| 10 | 10 | | 10.3 | 9.60 | 9 | 0.003 | 26.1 | 001.360 |

## Santa Maria CA

September 23, 1992

Number per cubic meter

Size: 3 micrometers; Range: 2-47 micrometers

| Approach number | Altitude (m) | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Begin time* | *End time* | | | | | | | | | | | | | | |
| | 143952 | 144110 | | | | | | | | | | | | | | |
| 1 | 250 | 0 | 2.55E+05 | 8.51E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 240 | 8.51E+04 | 8.51E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 230 | 1.12E+05 | 8.42E+04 | 2.82E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 220 | 1.41E+05 | 5.68E+04 | 2.84E+04 | 0 | 2.84E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 210 | 1.71E+05 | 8.53E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 200 | 2.14E+05 | 1.86E+05 | 0 | 2.84E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 190 | 2.39E+05 | 1.05E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 180 | 1.17E+07 | 1.81E+07 | 2.63E+07 | 4.56E+07 | 4.75E+07 | 2.27E+07 | 6.36E+06 | 2.48E+06 | 9.84E+05 | 3.96E+05 | 3.21E+05 | 4.91E+04 | 2.46E+04 | 7.37E+04 | 0 |
| 1 | 170 | 1.33E+07 | 1.87E+07 | 2.61E+07 | 5.51E+07 | 5.19E+07 | 2.21E+07 | 5.32E+06 | 2.19E+06 | 9.73E+05 | 1.12E+05 | 1.49E+05 | 7.51E+04 | 7.36E+04 | 0 | 0 |
| 1 | 160 | 1.40E+07 | 2.26E+07 | 4.55E+07 | 8.90E+07 | 5.20E+07 | 1.52E+07 | 4.07E+06 | 1.73E+06 | 8.36E+05 | 3.52E+05 | 7.33E+04 | 1.87E+04 | 5.59E+04 | 5.59E+04 | 0 |
| 1 | 150 | 1.76E+07 | 2.90E+07 | 6.48E+07 | 1.04E+08 | 3.43E+07 | 7.34E+06 | 1.62E+06 | 2.20E+05 | 1.47E+05 | 1.47E+05 | 7.34E+04 | 0 | 7.34E+04 | 1.47E+05 | 0 |
| 1 | 140 | 1.70E+07 | 3.11E+07 | 7.02E+07 | 1.07E+08 | 3.09E+07 | 6.64E+06 | 1.83E+06 | 6.71E+05 | 3.42E+05 | 1.64E+05 | 1.51E+05 | 2.49E+04 | 3.76E+04 | 2.50E+04 | 1.27E+04 |
| 1 | 130 | 1.29E+07 | 2.82E+07 | 6.46E+07 | 9.82E+07 | 3.45E+07 | 8.62E+06 | 2.18E+06 | 7.81E+05 | 3.52E+05 | 1.95E+05 | 0 | 7.85E+04 | 0 | 3.86E+04 | 0 |
| 1 | 120 | 1.89E+07 | 3.84E+07 | 1.08E+08 | 1.18E+08 | 2.41E+07 | 7.54E+06 | 2.74E+06 | 8.36E+05 | 4.28E+05 | 2.14E+05 | 1.37E+05 | 9.72E+04 | 0 | 1.94E+04 | 0 |
| 1 | 110 | 2.23E+07 | 5.77E+07 | 1.38E+08 | 9.84E+07 | 2.21E+07 | 7.53E+06 | 3.38E+06 | 1.56E+06 | 9.51E+05 | 3.03E+05 | 1.90E+05 | 1.90E+05 | 7.67E+04 | 0 | 3.83E+04 |
| 1 | 100 | 2.74E+07 | 6.81E+07 | 1.51E+08 | 8.10E+07 | 2.14E+07 | 8.89E+06 | 3.75E+06 | 2.72E+06 | 8.05E+05 | 4.98E+05 | 3.45E+05 | 1.54E+05 | 1.15E+05 | 3.84E+04 | 0 |
| 1 | 90 | 2.14E+07 | 5.23E+07 | 1.01E+08 | 7.17E+07 | 2.33E+07 | 8.93E+06 | 4.00E+06 | 2.30E+06 | 9.00E+05 | 5.00E+05 | 3.50E+05 | 1.50E+05 | 7.50E+04 | 2.50E+04 | 2.50E+04 |
| 1 | 80 | 2.28E+07 | 5.93E+07 | 9.46E+07 | 5.98E+07 | 2.46E+07 | 1.06E+07 | 4.99E+06 | 3.53E+06 | 1.53E+06 | 9.88E+05 | 3.70E+05 | 4.97E+04 | 4.94E+04 | 2.45E+04 | 0 |
| 1 | 70 | 3.08E+07 | 9.17E+07 | 8.83E+07 | 3.89E+07 | 1.59E+07 | 9.26E+06 | 5.02E+06 | 2.46E+06 | 2.06E+06 | 8.44E+05 | 4.47E+05 | 1.74E+05 | 4.95E+04 | 4.97E+04 | 2.48E+04 |
| 1 | 60 | 3.38E+07 | 7.20E+07 | 6.28E+07 | 3.24E+07 | 1.58E+07 | 9.83E+06 | 4.62E+06 | 2.97E+06 | 1.73E+06 | 8.54E+05 | 5.35E+05 | 1.21E+05 | 7.25E+04 | 7.24E+04 | 0 |
| 1 | 50 | 5.71E+07 | 1.15E+08 | 4.93E+07 | 1.43E+07 | 8.42E+06 | 3.62E+06 | 1.90E+06 | 1.33E+06 | 7.00E+05 | 5.00E+05 | 2.25E+05 | 0 | 7.51E+04 | 2.49E+04 | 2.49E+04 |
| 1 | 40 | 7.95E+07 | 1.15E+08 | 3.52E+07 | 9.43E+06 | 6.59E+06 | 4.11E+06 | 2.22E+06 | 1.37E+06 | 9.35E+05 | 5.07E+05 | 2.73E+05 | 1.56E+05 | 3.96E+04 | 1.89E+04 | 5.66E+04 |
| 1 | 30 | 5.12E+07 | 4.60E+07 | 1.48E+07 | 7.32E+06 | 5.72E+06 | 3.40E+06 | 2.20E+06 | 1.82E+06 | 1.13E+06 | 2.66E+05 | 2.41E+05 | 6.24E+04 | 7.50E+04 | 2.55E+04 | 2.53E+04 |
| 1 | 20 | 4.65E+07 | 3.56E+07 | 1.03E+07 | 5.77E+06 | 5.34E+06 | 3.83E+06 | 2.33E+06 | 1.89E+06 | 1.17E+06 | 6.47E+05 | 2.85E+05 | 1.78E+05 | 9.51E+04 | 4.47E+04 | 3.16E+04 |
| 1 | 10 | 4.69E+07 | 3.17E+07 | 7.21E+06 | 6.45E+06 | 5.91E+06 | 3.53E+06 | 2.84E+06 | 1.77E+06 | 8.44E+05 | 5.37E+05 | 0 | 2.30E+05 | 0 | 0 | 0 |
| | 150122 | 150224 | | | | | | | | | | | | | | |
| 3 | 230 | 1.41E+05 | 1.75E+05 | 0 | 0 | 0 | 6.61E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 220 | 1.37E+05 | 1.26E+05 | 9.49E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 210 | 1.98E+05 | 1.36E+05 | 4.18E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 200 | 0 | 0 | 0 | 4.21E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 190 | 2.09E+05 | 0 | 1.05E+05 | 0 | 1.05E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 180 | 3.40E+06 | 4.73E+06 | 1.17E+07 | 2.24E+07 | 7.93E+06 | 2.96E+06 | 1.07E+06 | 4.85E+05 | 5.09E+05 | 9.70E+04 | 1.21E+05 | 0 | 2.43E+04 | 0 | 0 |
| 3 | 170 | 1.87E+07 | 2.54E+07 | 6.09E+07 | 1.15E+08 | 5.07E+07 | 1.72E+07 | 8.29E+06 | 5.14E+06 | 2.57E+06 | 1.43E+06 | 4.76E+05 | 4.76E+05 | 7.33E+04 | 3.68E+04 | 0 |
| 3 | 160 | 2.35E+07 | 3.26E+07 | 9.79E+07 | 1.70E+08 | 4.39E+07 | 1.37E+07 | 5.87E+06 | 3.36E+06 | 2.09E+06 | 9.78E+05 | 4.59E+05 | 2.67E+05 | 5.86E+04 | 4.49E+04 | 0 |
| 3 | 150 | 2.04E+07 | 3.46E+07 | 7.20E+07 | 9.50E+07 | 3.38E+07 | 1.14E+07 | 4.20E+06 | 2.61E+06 | 1.07E+06 | 5.71E+05 | 2.86E+05 | 1.34E+05 | 5.68E+04 | 0 | 1.93E+04 |
| 3 | 140 | 2.49E+07 | 4.36E+07 | 1.04E+08 | 1.19E+08 | 3.98E+07 | 1.43E+07 | 5.20E+06 | 3.99E+06 | 1.67E+06 | 8.63E+05 | 5.09E+05 | 2.79E+05 | 1.77E+05 | 2.52E+04 | 2.59E+04 |
| 3 | 130 | 2.68E+07 | 5.76E+07 | 1.29E+08 | 1.29E+08 | 3.66E+07 | 1.18E+07 | 4.22E+06 | 2.39E+06 | 1.11E+06 | 6.15E+05 | 2.67E+05 | 1.91E+05 | 7.67E+04 | 3.88E+04 | 7.67E+04 |
| 3 | 120 | 2.94E+07 | 7.23E+07 | 1.43E+08 | 9.60E+07 | 2.64E+07 | 8.05E+06 | 2.75E+06 | 1.47E+06 | 1.03E+06 | 3.85E+05 | 7.74E+04 | 1.03E+05 | 7.69E+04 | 0 | 0 |
| 3 | 110 | 2.95E+07 | 8.00E+07 | 1.39E+08 | 7.94E+07 | 2.38E+07 | 6.60E+06 | 2.37E+06 | 1.29E+06 | 4.14E+05 | 1.81E+05 | 1.55E+05 | 0 | 0 | 7.74E+04 | 0 |
| 3 | 100 | 3.74E+07 | 1.27E+08 | 1.64E+08 | 5.62E+07 | 1.54E+07 | 5.08E+06 | 1.20E+06 | 8.14E+05 | 3.50E+05 | 2.33E+05 | 1.17E+05 | 3.91E+04 | 7.76E+04 | 0 | 0 |
| 3 | 90 | 3.69E+07 | 9.26E+07 | 9.33E+07 | 4.46E+07 | 1.70E+07 | 6.65E+06 | 2.79E+06 | 1.80E+06 | 9.42E+05 | 4.45E+05 | 2.36E+05 | 1.31E+05 | 2.61E+04 | 0 | 2.61E+04 |
| 3 | 80 | 4.28E+07 | 9.74E+07 | 9.70E+07 | 3.68E+07 | 1.65E+07 | 7.63E+06 | 4.25E+06 | 1.50E+06 | 1.50E+06 | 6.30E+05 | 4.72E+05 | 0 | 7.87E+04 | 0 | 1.57E+05 |
| 3 | 70 | 4.55E+07 | 9.34E+07 | 8.27E+07 | 3.03E+07 | 1.35E+07 | 6.08E+06 | 2.56E+06 | 1.29E+06 | 8.16E+05 | 2.11E+05 | 1.05E+05 | 1.32E+05 | 2.64E+04 | 2.63E+04 | 0 |
| 3 | 60 | 6.40E+07 | 1.52E+08 | 9.38E+07 | 2.32E+07 | 9.35E+06 | 5.28E+06 | 1.96E+06 | 1.53E+06 | 7.04E+05 | 7.81E+04 | 2.35E+05 | 3.92E+04 | 3.91E+04 | 3.92E+04 | 0 |
| 3 | 50 | 4.00E+07 | 1.18E+08 | 7.37E+07 | 1.98E+07 | 9.90E+06 | 5.46E+06 | 3.11E+06 | 1.71E+06 | 8.31E+05 | 7.02E+05 | 3.89E+05 | 1.04E+05 | 7.79E+04 | 1.04E+05 | 2.62E+04 |
| 3 | 40 | 5.46E+07 | 1.17E+08 | 5.14E+07 | 1.54E+07 | 8.28E+06 | 4.19E+06 | 3.14E+06 | 1.35E+06 | 1.14E+06 | 6.76E+05 | 2.08E+05 | 1.83E+05 | 1.04E+05 | 2.57E+04 | 0 |
| 3 | 30 | 8.30E+07 | 1.05E+08 | 3.06E+07 | 9.47E+06 | 5.67E+06 | 4.06E+06 | 2.48E+06 | 1.93E+06 | 1.16E+06 | 6.86E+05 | 1.59E+05 | 7.94E+04 | 5.28E+04 | 5.30E+04 | 2.62E+04 |
| 3 | 20 | 5.18E+07 | 4.32E+07 | 1.13E+07 | 6.78E+06 | 5.39E+06 | 3.87E+06 | 1.57E+06 | 1.42E+06 | 9.35E+05 | 4.57E+05 | 2.33E+05 | 1.10E+05 | 4.69E+04 | 1.59E+04 | 0 |
| 3 | 10 | 2.20E+07 | 1.97E+07 | 1.09E+07 | 1.14E+07 | 5.03E+06 | 2.17E+06 | 1.21E+06 | 8.45E+05 | 3.63E+05 | 2.82E+05 | 4.03E+04 | 0 | 0 | 0 | 0 |

## Santa Maria, CA

September 23, 1992

| Approach number | Altitude (m) Begin time | Bin 1 End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Number per cubic meter | | | | | | | | |
| | 143952 | 144110 | | | | | | Size: 300 micrometers; Range: 150-4650 micrometers | | | | | | | | |
| 1 | 250 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 240 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 230 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 220 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 210 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 190 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 180 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 170 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 160 | 39.17 | 6.367 | 4.452 | 4.686 | 0 | 2.627 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 150 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 140 | 19.31 | 2.893 | 1.513 | 1.592 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 130 | 14.7 | 0 | 4.576 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 120 | 0 | 4.33 | 2.307 | 2.392 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 110 | 0 | 4.299 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 60 | 9.213 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 50 | 0 | 2.734 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 20 | 1.138 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 150122 | 150224 | | | | | | | | | | | | | | |
| 3 | 230 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 220 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 210 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 190 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 180 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 170 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 160 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 150 | 10.66 | 6.371 | 6.673 | 0 | 2.483 | 2.63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 140 | 14.26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 130 | 14.27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 120 | 14.17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 110 | 14.29 | 5.69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 100 | 7.15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 90 | 9.533 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 70 | 4.773 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 60 | 7.11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 50 | 4.743 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 40 | 9.427 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 30 | 4.75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Santa Maria, CA

September 23, 1992

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| | 143952 | 144110 | | | | | | |
| 1 | 250 | | 21.5 | 18.88 | 1 | 0.000 | 3.3 | 000.34 |
| 1 | 240 | | 21.5 | 18.88 | 1 | 0.000 | 2.4 | 000.17 |
| 1 | 230 | | 21.5 | 18.88 | 3 | 0.000 | 3.1 | 000.22 |
| 1 | 220 | | 21.5 | 18.88 | 3 | 0.000 | 6.7 | 000.25 |
| 1 | 210 | | 21.5 | 18.88 | 1 | 0.000 | 2.3 | 000.26 |
| 1 | 200 | | 21.5 | 18.88 | 3 | 0.000 | 3.2 | 000.43 |
| 1 | 190 | | 20.9 | 18.23 | 3 | 0.000 | 2.2 | 000.34 |
| 1 | 180 | | 20.6 | 17.92 | 3 | 0.309 | 7.8 | 182.49 |
| 1 | 170 | | 20.6 | 17.92 | 2 | 0.309 | 7.5 | 196.11 |
| 1 | 160 | | 19.8 | 17.10 | 4 | 0.322 | 6.9 | 245.43 |
| 1 | 150 | | 18.9 | 16.22 | 1 | 0.255 | 6.1 | 259.38 |
| 1 | 140 | | 18.6 | 15.96 | 6 | 0.256 | 6.0 | 266.49 |
| 1 | 130 | | 18.1 | 15.47 | 2 | 0.257 | 6.2 | 250.63 |
| 1 | 120 | | 17.2 | 14.66 | 4 | 0.281 | 5.8 | 318.81 |
| 1 | 110 | | 16.8 | 14.31 | 2 | 0.297 | 5.9 | 352.22 |
| 1 | 100 | | 16.4 | 13.97 | 2 | 0.305 | 6.1 | 366.32 |
| 1 | 90 | | 15.9 | 13.53 | 3 | 0.273 | 6.6 | 286.79 |
| 1 | 80 | | 15.6 | 13.31 | 3 | 0.291 | 7.3 | 283.23 |
| 1 | 70 | | 15.0 | 12.84 | 3 | 0.253 | 7.9 | 285.98 |
| 1 | 60 | | 14.7 | 12.60 | 3 | 0.233 | 8.4 | 237.49 |
| 1 | 50 | | 14.2 | 12.20 | 3 | 0.127 | 7.1 | 252.79 |
| 1 | 40 | | 13.9 | 12.00 | 4 | 0.124 | 8.4 | 255.29 |
| 1 | 30 | | 13.4 | 11.67 | 6 | 0.097 | 9.8 | 134.19 |
| 1 | 20 | | 12.6 | 11.07 | 12 | 0.105 | 10.8 | 113.96 |
| 1 | 10 | | 12.2 | 10.80 | 1 | 0.090 | 9.9 | 107.88 |
| | 150122 | 150224 | | | | | | |
| 3 | 230 | | 21.5 | 18.88 | 2 | 0.000 | 8.4 | 000.38 |
| 3 | 220 | | 21.5 | 18.88 | 4 | 0.000 | 3.6 | 000.36 |
| 3 | 210 | | 21.5 | 18.88 | 2 | 0.000 | 3.0 | 000.38 |
| 3 | 200 | | 20.6 | 17.92 | 2 | 0.000 | 5.5 | 000.04 |
| 3 | 190 | | 20.6 | 17.92 | 1 | 0.000 | 6.8 | 000.42 |
| 3 | 180 | | 20.6 | 17.92 | 3 | 0.074 | 7.0 | 055.39 |
| 3 | 170 | | 20.6 | 17.92 | 2 | 0.462 | 7.5 | 306.17 |
| 3 | 160 | | 20.0 | 17.26 | 5 | 0.467 | 6.4 | 394.53 |
| 3 | 150 | | 18.9 | 16.24 | 4 | 0.312 | 6.7 | 275.96 |
| 3 | 140 | | 18.6 | 15.96 | 3 | 0.414 | 6.9 | 358.11 |
| 3 | 130 | | 18.1 | 15.47 | 2 | 0.389 | 6.2 | 399.74 |
| 3 | 120 | | 17.5 | 14.92 | 3 | 0.301 | 5.9 | 380.76 |
| 3 | 110 | | 17.2 | 14.66 | 3 | 0.260 | 5.8 | 362.81 |
| 3 | 100 | | 16.4 | 13.97 | 2 | 0.223 | 5.2 | 408.08 |
| 3 | 90 | | 16.4 | 13.97 | 3 | 0.212 | 6.5 | 297.40 |
| 3 | 80 | | 15.6 | 13.31 | 1 | 0.233 | 7.2 | 306.79 |
| 3 | 70 | | 15.6 | 13.31 | 3 | 0.172 | 6.4 | 276.57 |
| 3 | 60 | | 15.6 | 13.31 | 2 | 0.164 | 5.8 | 352.17 |
| 3 | 50 | | 15.0 | 12.84 | 3 | 0.176 | 7.5 | 273.63 |
| 3 | 40 | | 14.7 | 12.60 | 3 | 0.149 | 7.9 | 257.75 |
| 3 | 30 | | 14.2 | 12.20 | 3 | 0.126 | 9.0 | 244.62 |
| 3 | 20 | | 13.9 | 12.00 | 5 | 0.088 | 9.5 | 127.09 |
| 3 | 10 | | 13.4 | 11.67 | 2 | 0.059 | 7.7 | 073.88 |

# Worcester, MA

September 26, 1992

| Approach number | Altitude (m) | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Begin time* | *End time* | | | | | | Number per cubic meter | | | | | | | | |
| | 172307 | 172437 | | | | | | Size: 3 microns | Range: 2-47 microns | | | | | | | |
| 1 | 310 | 1.17E+06 | 6.99E+05 | 1.92E+06 | 2.04E+06 | 1.22E+06 | 1.17E+05 | 1.75E+05 | 5.83E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 300 | 1.36E+06 | 1.93E+06 | 2.98E+06 | 2.78E+06 | 7.73E+05 | 2.49E+05 | 1.01E+05 | 3.98E+04 | 4.14E+04 | 2.00E+04 | 0 | 0 | 1.99E+04 | 0 | 0 |
| 1 | 290 | 2.06E+06 | 4.02E+06 | 5.57E+06 | 4.92E+06 | 2.00E+06 | 7.24E+05 | 2.41E+05 | 6.92E+04 | 3.41E+04 | 6.87E+04 | 0 | 0 | 0 | 0 | 3.46E+04 |
| 1 | 280 | 2.34E+06 | 4.44E+06 | 5.96E+06 | 6.06E+06 | 2.30E+06 | 8.12E+05 | 2.03E+05 | 6.79E+04 | 1.02E+05 | 0 | 0 | 3.38E+04 | 0 | 0 | 0 |
| 1 | 270 | 4.79E+06 | 8.82E+06 | 1.17E+07 | 1.29E+07 | 5.77E+06 | 1.77E+06 | 2.84E+05 | 3.37E+04 | 1.63E+04 | 0 | 0 | 4.97E+04 | 1.63E+04 | 0 | 0 |
| 1 | 260 | 4.20E+06 | 7.87E+06 | 1.21E+07 | 1.15E+07 | 4.77E+06 | 1.37E+06 | 1.69E+05 | 5.08E+04 | 1.70E+04 | 3.39E+04 | 1.70E+04 | 3.40E+04 | 0 | 0 | 0 |
| 1 | 250 | 4.41E+06 | 1.14E+07 | 1.48E+07 | 1.68E+07 | 9.65E+06 | 3.96E+06 | 4.16E+05 | 1.33E+05 | 4.98E+04 | 4.85E+04 | 1.58E+04 | 4.98E+04 | 0 | 0 | 0 |
| 1 | 240 | 8.64E+06 | 1.87E+07 | 2.86E+07 | 4.28E+07 | 2.22E+07 | 7.34E+06 | 1.26E+06 | 1.32E+05 | 2.21E+04 | 2.19E+04 | 2.19E+04 | 2.21E+04 | 0 | 0 | 2.21E+04 |
| 1 | 230 | 1.25E+07 | 2.29E+07 | 3.67E+07 | 6.67E+07 | 3.61E+07 | 9.24E+06 | 1.30E+06 | 2.33E+05 | 9.99E+04 | 6.65E+04 | 0 | 0 | 0 | 0 | 0 |
| 1 | 220 | 9.93E+06 | 2.14E+07 | 3.66E+07 | 6.00E+07 | 2.72E+07 | 8.11E+06 | 1.21E+06 | 1.63E+05 | 6.62E+04 | 3.22E+04 | 0 | 0 | 3.22E+04 | 0 | 0 |
| 1 | 210 | 1.11E+07 | 2.21E+07 | 4.77E+07 | 5.96E+07 | 2.01E+07 | 5.96E+06 | 1.05E+06 | 1.30E+05 | 6.42E+04 | 0 | 0 | 0 | 2.18E+04 | 2.14E+04 | 0 |
| 1 | 200 | 2.40E+07 | 3.80E+07 | 1.08E+08 | 1.10E+08 | 1.96E+07 | 4.17E+06 | 1.33E+05 | 1.67E+05 | 6.67E+04 | 0 | 0 | 0 | 0 | 0 | 3.34E+04 |
| 1 | 190 | 2.14E+07 | 4.34E+07 | 8.40E+07 | 6.70E+07 | 1.05E+07 | 2.53E+06 | 2.74E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 3.45E+04 | 0 |
| 1 | 180 | 2.09E+07 | 4.76E+07 | 9.57E+07 | 5.85E+07 | 8.47E+06 | 1.28E+06 | 1.69E+05 | 4.97E+04 | 3.29E+04 | 3.36E+04 | 0 | 3.42E+04 | 1.68E+04 | 0 | 3.36E+04 |
| 1 | 170 | 2.93E+07 | 5.73E+07 | 1.44E+08 | 8.44E+07 | 1.37E+07 | 2.51E+06 | 2.50E+05 | 2.82E+04 | 2.73E+04 | 1.41E+04 | 1.39E+04 | 0 | 1.41E+04 | 0 | 0 |
| 1 | 160 | 2.50E+07 | 5.75E+07 | 1.43E+08 | 7.47E+07 | 1.34E+07 | 3.17E+06 | 6.89E+05 | 1.15E+05 | 6.91E+04 | 4.56E+04 | 2.30E+04 | 0 | 0 | 0 | 2.30E+04 |
| 1 | 150 | 1.63E+07 | 4.62E+07 | 7.79E+07 | 5.00E+07 | 1.20E+07 | 2.96E+06 | 3.71E+05 | 6.75E+04 | 2.02E+05 | 0 | 0 | 0 | 3.38E+04 | 0 | 0 |
| 1 | 140 | 3.04E+07 | 7.93E+07 | 1.42E+08 | 5.69E+07 | 7.97E+06 | 1.94E+06 | 2.72E+05 | 1.02E+05 | 1.02E+05 | 6.81E+04 | 0 | 0 | 0 | 0 | 0 |
| 1 | 130 | 2.70E+07 | 9.32E+07 | 1.40E+08 | 4.42E+07 | 5.84E+06 | 7.36E+05 | 1.11E+05 | 6.69E+04 | 2.23E+04 | 2.22E+04 | 0 | 0 | 0 | 0 | 0 |
| 1 | 120 | 3.22E+07 | 1.29E+08 | 1.67E+08 | 3.68E+07 | 5.68E+06 | 9.74E+05 | 9.86E+04 | 1.00E+05 | 3.29E+04 | 0 | 3.47E+04 | 0 | 0 | 0 | 0 |
| 1 | 110 | 3.87E+07 | 1.59E+08 | 1.75E+08 | 3.31E+07 | 4.97E+06 | 6.41E+05 | 4.60E+04 | 0 | 0 | 2.27E+04 | 0 | 0 | 0 | 0 | 2.27E+04 |
| 1 | 100 | 3.44E+07 | 1.30E+08 | 1.29E+08 | 2.72E+07 | 3.76E+06 | 6.44E+05 | 1.37E+05 | 1.52E+05 | 8.28E+04 | 1.35E+04 | 1.39E+04 | 2.75E+04 | 0 | 1.39E+04 | 0 |
| 1 | 90 | 4.02E+07 | 1.90E+08 | 1.04E+08 | 1.56E+07 | 3.00E+06 | 4.84E+05 | 3.24E+05 | 2.99E+05 | 1.38E+05 | 0 | 0 | 0 | 2.30E+04 | 0 | 0 |
| 1 | 80 | 5.72E+07 | 2.54E+08 | 1.46E+08 | 2.26E+07 | 3.66E+06 | 6.66E+05 | 2.32E+05 | 1.60E+05 | 9.20E+04 | 4.68E+04 | 4.57E+04 | 0 | 0 | 0 | 0 |
| 1 | 70 | 4.37E+07 | 1.41E+08 | 8.28E+07 | 1.26E+07 | 2.17E+06 | 6.11E+05 | 1.70E+05 | 2.38E+05 | 6.77E+04 | 6.79E+04 | 3.39E+04 | 0 | 3.39E+04 | 0 | 0 |
| 1 | 60 | 2.02E+07 | 5.53E+07 | 3.13E+07 | 5.25E+06 | 1.73E+06 | 3.67E+05 | 1.67E+05 | 1.66E+05 | 6.61E+04 | 3.31E+04 | 0 | 0 | 0 | 0 | 0 |
| 1 | 50 | 5.76E+07 | 1.66E+08 | 5.92E+07 | 7.55E+06 | 2.03E+06 | 6.98E+05 | 2.80E+05 | 1.74E+05 | 2.44E+05 | 0 | 0 | 0 | 0 | 0 | 3.46E+04 |
| 1 | 40 | 1.19E+08 | 1.81E+08 | 4.37E+07 | 5.60E+06 | 1.26E+06 | 4.92E+05 | 2.80E+05 | 1.40E+05 | 7.14E+04 | 0 | 0 | 0 | 2.34E+04 | 0 | 0 |
| 1 | 30 | 2.68E+07 | 3.93E+07 | 1.55E+07 | 3.92E+06 | 1.64E+06 | 4.78E+05 | 3.75E+05 | 1.02E+05 | 6.88E+04 | 0 | 6.75E+04 | 0 | 0 | 0 | 0 |
| 1 | 20 | 6.14E+07 | 5.73E+07 | 1.59E+07 | 3.58E+06 | 1.29E+06 | 7.67E+05 | 2.10E+05 | 2.44E+05 | 1.05E+05 | 1.05E+05 | 6.95E+04 | 7.02E+04 | 0 | 0 | 0 |
| 1 | 10 | 1.25E+07 | 1.61E+07 | 6.93E+06 | 2.45E+06 | 1.20E+06 | 7.83E+05 | 3.15E+05 | 2.26E+05 | 1.47E+05 | 8.83E+04 | 7.19E+04 | 2.35E+04 | 0 | 8471 | 0 |
| | 173353 | 173553 | | | | | | | | | | | | | | |
| 2 | 390 | 4.79E+06 | 6.11E+06 | 3.68E+06 | 4.14E+06 | 1.71E+06 | 5.91E+05 | 3.28E+05 | 1.31E+05 | 2.63E+05 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 380 | 1.20E+06 | 1.83E+06 | 3.20E+06 | 4.07E+06 | 2.04E+06 | 1.00E+06 | 4.67E+05 | 4.01E+05 | 0 | 6.70E+04 | 0 | 3.35E+04 | 0 | 0 | 0 |
| 2 | 370 | 1.24E+06 | 1.71E+06 | 2.87E+06 | 3.65E+06 | 2.44E+06 | 9.60E+05 | 9.25E+04 | 1.85E+05 | 3.05E+04 | 0 | 0 | 0 | 3.05E+04 | 0 | 0 |
| 2 | 360 | 1.63E+06 | 2.18E+06 | 2.23E+06 | 5.20E+06 | 2.61E+06 | 8.07E+05 | 5.54E+05 | 2.07E+05 | 1.07E+05 | 1.70E+05 | 3.35E+04 | 0 | 0 | 0 | 0 |
| 2 | 350 | 2.29E+06 | 1.99E+06 | 3.04E+06 | 3.63E+06 | 1.72E+06 | 4.17E+05 | 3.08E+05 | 9.28E+04 | 0 | 3.27E+04 | 9.28E+04 | 3.27E+04 | 0 | 0 | 0 |
| 2 | 340 | 3.65E+06 | 3.45E+06 | 5.18E+06 | 3.52E+06 | 1.26E+06 | 3.32E+05 | 1.99E+05 | 6.64E+04 | 6.64E+04 | 1.33E+05 | 1.33E+05 | 0 | 0 | 0 | 6.64E+04 |
| 2 | 330 | 2.48E+06 | 2.80E+06 | 4.21E+06 | 3.76E+06 | 1.41E+06 | 6.05E+05 | 2.85E+05 | 1.99E+05 | 4.62E+04 | 4.27E+04 | 0 | 4.62E+04 | 0 | 0 | 0 |
| 2 | 320 | 4.07E+06 | 5.85E+06 | 6.60E+06 | 5.33E+06 | 2.03E+06 | 6.78E+05 | 2.71E+05 | 2.63E+05 | 1.22E+05 | 1.66E+05 | 7.00E+04 | 5.41E+04 | 0 | 0 | 3.63E+04 |
| 2 | 310 | 6.11E+06 | 7.88E+06 | 1.06E+07 | 8.76E+06 | 3.35E+06 | 1.15E+06 | 3.89E+05 | 2.83E+05 | 5.39E+04 | 1.41E+05 | 7.08E+04 | 8.87E+04 | 3.52E+04 | 5.29E+04 | 0 |
| 2 | 300 | 5.39E+06 | 9.53E+06 | 1.30E+07 | 1.27E+07 | 5.78E+06 | 2.30E+06 | 4.70E+05 | 1.96E+05 | 1.02E+05 | 5.78E+04 | 2.25E+04 | 1.12E+04 | 1.15E+04 | 1.13E+04 | 0 |
| 2 | 290 | 5.50E+06 | 9.65E+06 | 1.36E+07 | 1.60E+07 | 9.85E+06 | 4.99E+06 | 1.14E+06 | 2.68E+05 | 1.00E+05 | 6.70E+04 | 0 | 3.34E+04 | 0 | 0 | 3.37E+04 |
| 2 | 280 | 4.73E+06 | 9.57E+06 | 1.55E+07 | 1.80E+07 | 1.18E+07 | 5.79E+06 | 1.51E+06 | 1.77E+05 | 4.46E+04 | 4.55E+04 | 6.73E+04 | 4.46E+04 | 2.16E+04 | 0 | 2.18E+04 |
| 2 | 270 | 5.37E+06 | 1.15E+07 | 1.68E+07 | 1.79E+07 | 7.20E+06 | 1.81E+06 | 3.40E+05 | 1.57E+05 | 1.12E+05 | 6.83E+04 | 2.30E+04 | 2.19E+04 | 0 | 2.19E+04 | 0 |
| 2 | 260 | 7.39E+06 | 1.48E+07 | 2.28E+07 | 2.40E+07 | 1.09E+07 | 3.44E+06 | 4.89E+05 | 1.77E+05 | 8.88E+04 | 2.24E+04 | 0 | 0 | 0 | 0 | 0 |
| 2 | 250 | 6.16E+06 | 1.43E+07 | 2.18E+07 | 2.48E+07 | 1.37E+07 | 5.30E+06 | 1.12E+06 | 2.02E+05 | 1.79E+05 | 1.13E+05 | 2.24E+04 | 2.24E+04 | 0 | 0 | 0 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number per cubic meter | | | | | | | | | | | | | | |
| 2 | 240 | | 7.85E+06 | 1.75E+07 | 2.83E+07 | 3.11E+07 | 1.42E+07 | 4.45E+06 | 7.62E+05 | 1.50E+05 | 6.50E+04 | 5.06E+04 | 3.38E+04 | 0 | 1.65E+04 | 1.69E+04 | 3.37E+04 |
| 2 | 230 | | 6.93E+06 | 1.62E+07 | 2.68E+07 | 2.93E+07 | 1.10E+07 | 3.08E+06 | 4.54E+05 | 1.15E+05 | 1.15E+05 | 9.09E+04 | 1.13E+05 | 0 | 0 | 2.31E+04 | 0 |
| 2 | 220 | | 8.38E+06 | 1.57E+07 | 2.87E+07 | 3.49E+07 | 1.11E+07 | 3.06E+06 | 4.74E+05 | 1.36E+05 | 9.03E+04 | 6.71E+04 | 2.22E+04 | 0 | 2.27E+04 | 0 | 2.27E+04 |
| 2 | 210 | | 9.79E+06 | 2.21E+07 | 4.11E+07 | 4.83E+07 | 1.58E+07 | 4.27E+06 | 6.93E+05 | 1.16E+05 | 1.15E+05 | 2.31E+04 | 0 | 4.61E+04 | 2.31E+04 | 2.31E+04 | 0 |
| 2 | 200 | | 1.45E+07 | 2.96E+07 | 5.91E+07 | 5.28E+07 | 1.16E+07 | 2.51E+06 | 4.14E+05 | 1.61E+05 | 4.60E+04 | 0 | 4.59E+04 | 0 | 0 | 0 | 0 |
| 2 | 190 | | 5.35E+06 | 1.46E+07 | 2.21E+07 | 1.39E+07 | 3.74E+06 | 5.34E+05 | 2.34E+05 | 2.00E+05 | 1.67E+05 | 0 | 6.72E+04 | 0 | 0 | 0 | 0 |
| 2 | 180 | | 1.22E+07 | 3.27E+07 | 4.90E+07 | 2.69E+07 | 6.15E+06 | 1.26E+06 | 1.82E+05 | 2.04E+05 | 9.12E+04 | 0 | 2.23E+04 | 2.31E+04 | 2.31E+04 | 0 | 0 |
| 2 | 170 | | 1.64E+07 | 3.73E+07 | 7.24E+07 | 5.75E+07 | 1.28E+07 | 2.49E+06 | 4.38E+05 | 2.30E+05 | 9.20E+04 | 2.29E+04 | 4.59E+04 | 2.29E+04 | 2.29E+04 | 0 | 0 |
| 2 | 160 | | 2.37E+07 | 5.24E+07 | 1.24E+08 | 8.49E+07 | 1.62E+07 | 2.97E+06 | 4.02E+05 | 1.75E+05 | 7.04E+04 | 1.75E+04 | 1.77E+04 | 1.75E+04 | 0 | 1.75E+04 | 0 |
| 2 | 150 | | 2.40E+07 | 6.82E+07 | 1.26E+08 | 5.48E+07 | 9.81E+06 | 2.19E+06 | 3.72E+05 | 1.39E+05 | 1.40E+05 | 0 | 9.24E+04 | 0 | 4.64E+04 | 0 | 2.32E+04 |
| 2 | 140 | | 1.97E+07 | 5.39E+07 | 9.56E+07 | 4.25E+07 | 6.76E+06 | 1.66E+06 | 2.07E+05 | 1.73E+05 | 6.84E+04 | 1.72E+05 | 3.47E+04 | 0 | 0 | 0 | 0 |
| 2 | 130 | | 2.52E+07 | 6.49E+07 | 1.20E+08 | 4.66E+07 | 6.81E+06 | 1.86E+06 | 2.41E+05 | 1.73E+05 | 1.71E+05 | 3.46E+04 | 3.46E+04 | 6.87E+04 | 3.46E+04 | 3.46E+04 | 0 |
| 2 | 120 | | 3.15E+07 | 1.04E+08 | 1.40E+08 | 3.79E+07 | 5.79E+06 | 1.19E+06 | 2.33E+05 | 9.33E+04 | 2.32E+04 | 4.69E+04 | 4.65E+04 | 2.36E+04 | 2.36E+04 | 0 | 2.32E+04 |
| 2 | 110 | | 2.73E+07 | 9.44E+07 | 1.23E+08 | 3.02E+07 | 4.82E+06 | 1.40E+06 | 3.42E+05 | 1.37E+05 | 2.06E+05 | 3.41E+04 | 6.84E+04 | 0 | 3.43E+04 | 0 | 0 |
| 2 | 100 | | 3.54E+07 | 1.24E+08 | 1.03E+08 | 1.88E+07 | 2.72E+06 | 5.07E+05 | 2.53E+05 | 1.15E+05 | 0 | 4.62E+04 | 4.61E+04 | 2.32E+04 | 0 | 2.31E+04 | 2.31E+04 |
| 2 | 90 | | 3.89E+07 | 1.43E+08 | 1.21E+08 | 2.10E+07 | 3.65E+06 | 9.70E+05 | 3.70E+05 | 2.07E+05 | 2.09E+05 | 6.91E+04 | 2.30E+04 | 0 | 4.64E+04 | 2.31E+04 | 0 |
| 2 | 80 | | 5.89E+07 | 2.01E+08 | 1.22E+08 | 1.77E+07 | 2.87E+06 | 5.60E+05 | 3.28E+05 | 2.83E+05 | 2.11E+05 | 2.35E+04 | 2.36E+04 | 0 | 0 | 0 | 0 |
| 2 | 70 | | 6.68E+07 | 2.05E+08 | 9.13E+07 | 1.16E+07 | 2.07E+06 | 7.14E+05 | 3.93E+05 | 2.14E+05 | 1.78E+05 | 3.57E+04 | 7.14E+04 | 3.57E+04 | 0 | 0 | 0 |
| 2 | 60 | | 7.06E+07 | 1.90E+08 | 6.75E+07 | 1.12E+07 | 1.46E+06 | 6.26E+05 | 3.48E+05 | 2.43E+05 | 6.94E+04 | 0 | 0 | 3.48E+04 | 3.47E+04 | 0 | 0 |
| 2 | 50 | | 5.03E+07 | 1.06E+08 | 3.51E+07 | 5.93E+06 | 1.22E+06 | 4.88E+05 | 1.74E+05 | 2.44E+05 | 0 | 0 | 6.98E+04 | 0 | 0 | 0 | 0 |
| 2 | 40 | | 3.26E+07 | 2.88E+07 | 8.59E+06 | 3.43E+06 | 1.21E+06 | 3.93E+05 | 1.86E+05 | 1.85E+05 | 2.34E+04 | 2.34E+04 | 1.15E+05 | 0 | 0 | 2.34E+04 | 0 |
| 2 | 30 | | 5.24E+07 | 4.60E+07 | 8.81E+06 | 3.69E+06 | 1.56E+06 | 7.18E+05 | 4.76E+05 | 1.91E+05 | 7.12E+04 | 1.20E+05 | 0 | 0 | 0 | 0 | 2.42E+04 |
| 2 | 20 | | 2.98E+07 | 2.32E+07 | 6.42E+06 | 3.61E+06 | 2.17E+06 | 7.30E+05 | 3.08E+05 | 2.54E+05 | 1.35E+05 | 1.64E+05 | 2.06E+04 | 2.06E+04 | 0 | 4.67E+04 | 0 |
| 2 | 10 | | 4.84E+06 | 9.22E+06 | 4.82E+06 | 2.12E+06 | 1.09E+06 | 7.50E+05 | 5.00E+05 | 3.33E+05 | 1.88E+05 | 9.38E+04 | 5.10E+04 | 2.71E+04 | 2.18E+04 | 2.17E+04 | 0 |
| | 174509 | 174646 | | | | | | | | | | | | | | | |
| 3 | 320 | | 1.91E+06 | 1.41E+06 | 2.97E+06 | 3.04E+06 | 1.70E+06 | 2.83E+05 | 1.41E+05 | 0 | 0 | 0 | 7.07E+04 | 0 | 0 | 0 | 0 |
| 3 | 310 | | 1.53E+06 | 1.39E+06 | 2.56E+06 | 3.20E+06 | 1.57E+06 | 4.97E+05 | 2.49E+05 | 1.07E+05 | 3.51E+04 | 0 | 0 | 0 | 3.51E+04 | 0 | 3.51E+04 |
| 3 | 300 | | 2.35E+06 | 2.06E+06 | 3.98E+06 | 4.00E+06 | 1.68E+06 | 4.89E+05 | 2.70E+05 | 1.34E+05 | 1.18E+05 | 3.40E+04 | 3.40E+04 | 3.37E+04 | 0 | 0 | 0 |
| 3 | 290 | | 2.77E+06 | 3.08E+06 | 4.86E+06 | 5.97E+06 | 2.15E+06 | 5.07E+05 | 2.65E+05 | 1.46E+05 | 4.85E+04 | 4.85E+04 | 0 | 0 | 2.67E+04 | 0 | 2.17E+04 |
| 3 | 280 | | 5.89E+06 | 1.09E+07 | 1.08E+07 | 7.29E+06 | 2.17E+06 | 9.77E+05 | 2.79E+05 | 1.75E+05 | 1.24E+05 | 7.00E+04 | 3.42E+04 | 1.80E+04 | 0 | 5.24E+04 | 0 |
| 3 | 270 | | 1.18E+07 | 3.27E+07 | 3.23E+07 | 1.68E+07 | 9.84E+06 | 3.90E+06 | 5.63E+05 | 2.10E+05 | 1.07E+05 | 6.96E+04 | 3.48E+04 | 0 | 3.48E+04 | 0 | 0 |
| 3 | 260 | | 1.02E+07 | 2.46E+07 | 2.76E+07 | 2.08E+07 | 1.01E+07 | 3.61E+06 | 6.06E+05 | 4.20E+05 | 1.17E+05 | 1.40E+05 | 9.35E+04 | 4.67E+04 | 0 | 0 | 0 |
| 3 | 250 | | 1.00E+07 | 2.49E+07 | 2.99E+07 | 2.14E+07 | 1.03E+07 | 3.03E+06 | 5.56E+05 | 2.31E+05 | 9.26E+04 | 2.31E+04 | 4.64E+04 | 4.63E+04 | 9.25E+04 | 4.64E+04 | 0 |
| 3 | 240 | | 2.09E+07 | 3.76E+07 | 8.02E+07 | 6.43E+07 | 2.01E+07 | 4.91E+06 | 7.14E+05 | 2.79E+05 | 1.15E+05 | 4.51E+04 | 6.86E+04 | 6.91E+04 | 0 | 0 | 0 |
| 3 | 230 | | 1.55E+07 | 3.93E+07 | 6.12E+07 | 6.52E+07 | 1.98E+07 | 4.18E+06 | 8.52E+05 | 2.77E+05 | 2.08E+05 | 4.64E+04 | 4.59E+04 | 2.30E+04 | 2.28E+04 | 2.30E+04 | 0 |
| 3 | 220 | | 1.07E+07 | 2.17E+07 | 2.71E+07 | 2.93E+07 | 8.57E+06 | 2.68E+06 | 4.99E+05 | 2.97E+05 | 2.97E+05 | 6.78E+04 | 1.13E+05 | 2.26E+04 | 0 | 0 | 0 |
| 3 | 210 | | 1.28E+07 | 2.23E+07 | 2.77E+07 | 2.40E+07 | 7.30E+06 | 1.38E+06 | 4.67E+05 | 2.56E+05 | 9.29E+04 | 2.30E+04 | 6.96E+04 | 4.63E+04 | 2.33E+04 | 2.33E+04 | 0 |
| 3 | 200 | | 9.14E+06 | 2.03E+07 | 3.66E+07 | 3.57E+07 | 9.51E+06 | 2.28E+06 | 7.12E+05 | 3.31E+05 | 2.22E+05 | 8.93E+04 | 8.97E+04 | 4.53E+04 | 4.53E+04 | 0 | 0 |
| 3 | 190 | | 8.56E+06 | 1.90E+07 | 2.94E+07 | 1.85E+07 | 4.54E+06 | 1.29E+06 | 4.38E+05 | 2.52E+05 | 1.84E+05 | 1.37E+05 | 2.28E+04 | 2.28E+04 | 0 | 2.33E+04 | 0 |
| 3 | 180 | | 1.13E+07 | 3.12E+07 | 5.80E+07 | 3.23E+07 | 6.30E+06 | 1.28E+06 | 5.41E+05 | 2.25E+05 | 1.13E+05 | 6.77E+04 | 4.50E+04 | 4.46E+04 | 4.46E+04 | 2.27E+04 | 2.23E+04 |
| 3 | 170 | | 2.52E+07 | 5.10E+07 | 1.14E+08 | 6.95E+07 | 9.96E+06 | 1.89E+06 | 1.71E+05 | 2.38E+05 | 6.86E+04 | 6.86E+04 | 3.50E+04 | 3.50E+04 | 3.50E+04 | 3.36E+04 | 0 |
| 3 | 160 | | 1.70E+07 | 4.23E+07 | 8.16E+07 | 5.08E+07 | 8.50E+06 | 1.60E+06 | 5.30E+05 | 1.83E+05 | 2.52E+05 | 4.62E+04 | 9.22E+04 | 0 | 2.34E+04 | 0 | 2.26E+04 |
| 3 | 150 | | 2.55E+07 | 6.27E+07 | 1.43E+08 | 6.69E+07 | 9.81E+06 | 1.90E+06 | 3.66E+05 | 1.14E+05 | 1.14E+05 | 1.83E+05 | 2.30E+04 | 2.27E+04 | 2.30E+04 | 0 | 0 |
| 3 | 140 | | 2.57E+07 | 7.07E+07 | 1.49E+08 | 5.78E+07 | 8.46E+06 | 1.52E+06 | 2.99E+05 | 9.20E+04 | 4.61E+04 | 4.58E+04 | 2.32E+04 | 2.28E+04 | 2.32E+04 | 0 | 0 |
| 3 | 130 | | 3.24E+07 | 1.02E+08 | 1.92E+08 | 5.44E+07 | 8.14E+06 | 1.16E+06 | 1.76E+05 | 1.75E+05 | 5.26E+04 | 1.74E+04 | 5.27E+04 | 1.74E+04 | 3.56E+04 | 0 | 0 |
| 3 | 120 | | 2.38E+07 | 8.53E+07 | 1.13E+08 | 2.99E+07 | 4.70E+06 | 9.18E+05 | 3.70E+05 | 1.85E+05 | 1.13E+05 | 6.91E+04 | 4.50E+04 | 0 | 2.30E+04 | 0 | 4.68E+04 |
| 3 | 110 | | 3.45E+07 | 1.25E+08 | 1.62E+08 | 2.80E+07 | 4.06E+06 | 1.02E+06 | 2.77E+05 | 2.54E+05 | 1.15E+05 | 4.66E+04 | 2.32E+04 | 2.28E+04 | 0 | 0 | 0 |
| 3 | 100 | | 4.44E+07 | 1.77E+08 | 1.19E+08 | 1.64E+07 | 1.87E+06 | 4.82E+05 | 1.03E+05 | 1.73E+05 | 6.91E+04 | 3.48E+04 | 3.43E+04 | 3.43E+04 | 0 | 0 | 0 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number per cubic meter | | | | | | | | | | | | | | |
| 3 | 90 | | 3.91E+07 | 1.59E+08 | 7.50E+07 | 9.40E+06 | 2.09E+06 | 3.70E+05 | 3.66E+05 | 6.64E+04 | 9.95E+04 | 6.64E+04 | 0 | 3.32E+04 | 3.40E+04 | 0 | 0 |
| 3 | 80 | | 5.05E+07 | 1.60E+08 | 4.55E+07 | 6.76E+06 | 1.82E+06 | 7.02E+05 | 1.40E+05 | 1.06E+05 | 7.08E+04 | 3.54E+04 | 3.48E+04 | 0 | 3.48E+04 | 0 | 0 |
| 3 | 70 | | 4.89E+07 | 5.74E+07 | 2.07E+07 | 5.50E+06 | 1.84E+06 | 7.48E+05 | 2.39E+05 | 2.04E+05 | 1.05E+05 | 1.00E+05 | 0 | 3.34E+04 | 0 | 0 | 0 |
| 3 | 60 | | 1.16E+08 | 1.38E+08 | 3.08E+07 | 3.87E+06 | 1.61E+06 | 6.60E+05 | 4.97E+05 | 1.65E+05 | 4.70E+04 | 6.99E+04 | 2.42E+04 | 2.28E+04 | 0 | 2.28E+04 | 0 |
| 3 | 50 | | 7.93E+07 | 1.41E+08 | 3.91E+07 | 5.44E+06 | 1.90E+06 | 6.48E+05 | 2.78E+05 | 6.95E+04 | 4.70E+04 | 0 | 0 | 0 | 0 | 2.26E+04 | 0 |
| 3 | 40 | | 3.02E+07 | 3.73E+07 | 9.66E+06 | 3.10E+06 | 1.32E+06 | 4.83E+05 | 1.84E+05 | 1.62E+05 | 6.86E+04 | 2.33E+04 | 2.33E+04 | 2.33E+04 | 4.59E+04 | 2.33E+04 | 0 |
| 3 | 30 | | 2.67E+06 | 2.45E+06 | 2.42E+06 | 2.43E+06 | 1.15E+06 | 7.29E+05 | 1.91E+05 | 1.95E+05 | 6.28E+04 | 4.12E+04 | 3.90E+04 | 4.65E+04 | 2.48E+04 | 0 | 1.95E+04 |
| 3 | 20 | | 2.02E+06 | 2.45E+06 | 2.68E+06 | 1.86E+06 | 3.63E+05 | 1.81E+05 | 6.18E+04 | 6.18E+04 | 9.58E+04 | 2.99E+04 | 0 | 0 | 0 | 0 | 0 |
| 3 | 10 | | 1.07E+06 | 1.16E+06 | 1.33E+06 | 9.83E+05 | 7.80E+05 | 4.33E+05 | 2.88E+05 | 1.48E+05 | 1.35E+05 | 6.92E+04 | 1.19E+04 | 2.33E+04 | 0 | 1.10E+04 | 0 |
| | 175527 | 175705 | | | | | | | | | | | | | | | |
| 4 | 310 | | 1.38E+06 | 1.40E+06 | 1.42E+06 | 1.18E+06 | 3.57E+05 | 1.46E+05 | 1.43E+05 | 6.97E+04 | 3.49E+04 | 3.65E+04 | 0 | 0 | 0 | 3.49E+04 | 0 |
| 4 | 300 | | 3.11E+06 | 3.77E+06 | 2.26E+06 | 2.15E+06 | 8.75E+05 | 4.20E+05 | 8.97E+04 | 2.20E+04 | 6.60E+04 | 2.29E+04 | 0 | 2.20E+04 | 0 | 0 | 2.12E+04 |
| 4 | 290 | | 1.93E+06 | 2.07E+06 | 2.48E+06 | 2.56E+06 | 1.02E+06 | 4.52E+05 | 1.13E+05 | 1.13E+05 | 3.73E+04 | 3.73E+04 | 7.52E+04 | 0 | 0 | 3.79E+04 | 0 |
| 4 | 280 | | 6.39E+06 | 7.51E+06 | 4.35E+06 | 3.97E+06 | 1.41E+06 | 4.35E+05 | 1.79E+05 | 1.09E+05 | 1.08E+05 | 3.70E+04 | 0 | 3.70E+04 | 0 | 0 | 0 |
| 4 | 270 | | 6.27E+06 | 9.13E+06 | 9.76E+06 | 9.31E+06 | 3.13E+06 | 1.18E+06 | 2.79E+05 | 1.37E+05 | 1.61E+05 | 4.60E+04 | 4.68E+04 | 0 | 0 | 0 | 0 |
| 4 | 260 | | 1.41E+07 | 2.73E+07 | 3.88E+07 | 4.27E+07 | 1.30E+07 | 2.93E+06 | 4.19E+05 | 1.79E+05 | 1.34E+04 | 5.52E+04 | 1.40E+04 | 1.45E+04 | 0 | 2.74E+04 | 0 |
| 4 | 250 | | 8.51E+06 | 1.52E+07 | 2.98E+07 | 3.56E+07 | 9.09E+06 | 1.86E+06 | 4.66E+05 | 3.12E+05 | 2.08E+05 | 5.23E+04 | 3.52E+04 | 5.20E+04 | 1.77E+04 | 5.14E+04 | 1.75E+04 |
| 4 | 240 | | 1.18E+07 | 2.12E+07 | 2.99E+07 | 3.85E+07 | 1.47E+07 | 2.58E+06 | 4.89E+05 | 2.81E+05 | 1.05E+05 | 2.09E+05 | 3.52E+04 | 0 | 3.52E+04 | 0 | 0 |
| 4 | 230 | | 1.50E+07 | 2.52E+07 | 3.27E+07 | 4.15E+07 | 1.61E+07 | 4.50E+06 | 6.38E+05 | 2.05E+05 | 1.60E+05 | 0 | 4.57E+04 | 0 | 2.33E+04 | 0 | 0 |
| 4 | 220 | | 1.16E+07 | 2.55E+07 | 4.12E+07 | 4.57E+07 | 1.49E+07 | 3.75E+06 | 7.82E+05 | 1.60E+05 | 1.60E+05 | 2.33E+04 | 0 | 0 | 6.84E+04 | 0 | 0 |
| 4 | 210 | | 1.09E+07 | 1.79E+07 | 2.97E+07 | 3.87E+07 | 9.55E+06 | 2.15E+06 | 3.13E+05 | 3.11E+05 | 6.98E+04 | 3.50E+04 | 1.03E+05 | 1.73E+04 | 0 | 3.48E+04 | 1.76E+04 |
| 4 | 200 | | 3.68E+06 | 5.90E+06 | 7.89E+06 | 7.56E+06 | 2.81E+06 | 7.42E+05 | 2.68E+05 | 6.95E+04 | 2.04E+05 | 3.30E+04 | 1.74E+04 | 5.21E+04 | 3.31E+04 | 0 | 0 |
| 4 | 190 | | 9.64E+06 | 2.41E+07 | 4.53E+07 | 3.75E+07 | 9.66E+06 | 1.93E+06 | 3.46E+05 | 1.73E+05 | 1.05E+05 | 3.52E+04 | 3.52E+04 | 3.52E+04 | 3.43E+04 | 0 | 0 |
| 4 | 180 | | 1.53E+07 | 3.35E+07 | 6.41E+07 | 4.23E+07 | 7.74E+06 | 1.48E+06 | 5.01E+05 | 2.41E+05 | 1.38E+05 | 8.65E+04 | 6.94E+04 | 0 | 1.76E+04 | 1.68E+04 | 0 |
| 4 | 170 | | 1.93E+07 | 5.07E+07 | 1.12E+08 | 6.32E+07 | 8.97E+06 | 1.64E+06 | 3.08E+05 | 3.08E+05 | 1.02E+05 | 1.03E+05 | 3.39E+04 | 3.44E+04 | 6.89E+04 | 0 | 0 |
| 4 | 160 | | 2.42E+07 | 5.75E+07 | 1.32E+08 | 5.63E+07 | 7.67E+06 | 1.51E+06 | 4.40E+05 | 2.79E+05 | 9.22E+04 | 6.93E+04 | 2.29E+04 | 4.70E+04 | 0 | 2.29E+04 | 0 |
| 4 | 150 | | 2.35E+07 | 5.61E+07 | 9.14E+07 | 3.10E+07 | 5.83E+06 | 7.79E+05 | 4.29E+05 | 1.41E+05 | 1.44E+05 | 1.80E+05 | 7.04E+04 | 0 | 1.05E+05 | 0 | 0 |
| 4 | 140 | | 2.40E+07 | 7.34E+07 | 1.06E+08 | 3.28E+07 | 4.79E+06 | 9.45E+05 | 4.01E+05 | 1.69E+05 | 6.86E+04 | 6.86E+04 | 0 | 3.43E+04 | 0 | 0 | 3.43E+04 |
| 4 | 130 | | 2.82E+07 | 1.08E+08 | 1.43E+08 | 3.23E+07 | 4.86E+06 | 1.11E+06 | 1.03E+05 | 2.41E+05 | 1.72E+05 | 3.50E+04 | 0 | 3.42E+04 | 0 | 0 | 0 |
| 4 | 120 | | 3.25E+07 | 1.33E+08 | 1.56E+08 | 2.38E+07 | 4.95E+06 | 1.01E+06 | 3.84E+05 | 1.06E+05 | 2.81E+05 | 3.54E+04 | 3.54E+04 | 0 | 0 | 0 | 3.54E+04 |
| 4 | 110 | | 3.65E+07 | 1.54E+08 | 1.40E+08 | 2.12E+07 | 3.59E+06 | 8.72E+05 | 4.53E+05 | 1.05E+05 | 3.49E+04 | 1.05E+05 | 0 | 3.49E+04 | 3.49E+04 | 0 | 0 |
| 4 | 100 | | 4.33E+07 | 1.82E+08 | 1.10E+08 | 1.50E+07 | 2.18E+06 | 5.54E+05 | 4.49E+05 | 3.13E+05 | 2.08E+05 | 6.98E+04 | 6.98E+04 | 6.90E+04 | 0 | 3.49E+04 | 0 |
| 4 | 90 | | 4.44E+07 | 1.66E+08 | 9.22E+07 | 1.18E+07 | 1.92E+06 | 6.81E+05 | 2.11E+05 | 2.63E+05 | 5.21E+04 | 5.26E+04 | 3.48E+04 | 1.74E+04 | 3.47E+04 | 1.74E+04 | 0 |
| 4 | 80 | | 8.06E+07 | 2.23E+08 | 8.41E+07 | 1.11E+07 | 2.52E+06 | 1.22E+06 | 5.01E+05 | 2.43E+05 | 1.73E+05 | 1.71E+05 | 8.57E+04 | 4.32E+04 | 0 | 0 | 0 |
| 4 | 70 | | 5.19E+07 | 1.05E+08 | 3.69E+07 | 5.94E+06 | 1.60E+06 | 8.36E+05 | 5.48E+05 | 1.79E+05 | 1.80E+05 | 1.06E+05 | 3.69E+04 | 0 | 0 | 0 | 0 |
| 4 | 60 | | 1.13E+07 | 2.30E+07 | 1.13E+07 | 4.63E+06 | 2.03E+06 | 1.22E+06 | 3.70E+05 | 2.42E+05 | 4.82E+04 | 1.26E+05 | 0 | 0 | 2.53E+04 | 0 | 0 |
| 4 | 50 | | 2.21E+07 | 3.20E+07 | 8.77E+06 | 3.40E+06 | 1.74E+06 | 7.44E+05 | 4.37E+05 | 3.18E+05 | 1.22E+05 | 2.56E+04 | 9.74E+04 | 5.13E+04 | 2.37E+04 | 2.37E+04 | 2.56E+04 |
| 4 | 40 | | 2.53E+07 | 2.59E+07 | 7.10E+06 | 3.40E+06 | 1.13E+06 | 4.74E+05 | 3.90E+05 | 1.85E+05 | 5.05E+04 | 1.41E+05 | 7.19E+04 | 6.89E+04 | 2.20E+04 | 2.53E+04 | 0 |
| 4 | 30 | | 3.01E+06 | 2.94E+06 | 3.56E+06 | 1.64E+06 | 6.64E+05 | 5.11E+05 | 1.85E+05 | 1.48E+05 | 0 | 7.24E+04 | 1.10E+05 | 3.62E+04 | 0 | 0 | 0 |
| 4 | 20 | | 3.54E+06 | 3.44E+06 | 2.99E+06 | 2.21E+06 | 6.99E+05 | 5.83E+05 | 7.84E+04 | 3.81E+04 | 1.59E+05 | 7.63E+04 | 0 | 7.84E+04 | 3.81E+04 | 1.19E+05 | 3.81E+04 |
| 4 | 10 | | 1.30E+06 | 1.24E+06 | 1.21E+06 | 1.96E+06 | 1.50E+06 | 1.19E+06 | 7.44E+05 | 4.61E+05 | 3.70E+05 | 1.33E+05 | 1.20E+05 | 4.33E+04 | 3.61E+04 | 1.59E+04 | 1.87E+04 |
| | 180622 | 180800 | | | | | | | | | | | | | | | |
| 5 | 330 | | 7.87E+04 | 7.19E+04 | 1.44E+05 | 6.44E+04 | 1.31E+05 | 4.54E+04 | 0 | 2.65E+04 | 0 | 0 | 1.90E+04 | 0 | 0 | 0 | 0 |
| 5 | 320 | | 2.33E+05 | 4.34E+05 | 3.95E+05 | 4.04E+05 | 1.01E+05 | 0 | 3.42E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 310 | | 4.30E+05 | 6.26E+05 | 7.30E+05 | 3.31E+05 | 8.97E+04 | 3.84E+04 | 1.79E+04 | 0 | 1.79E+04 | 0 | 0 | 0 | 0 | 0 | 1.90E+04 |
| 5 | 300 | | 4.97E+05 | 6.07E+05 | 5.69E+05 | 3.05E+05 | 1.55E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 290 | | 1.42E+05 | 1.63E+05 | 1.21E+05 | 7.94E+04 | 3.97E+04 | 4.07E+04 | 1.99E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 280 | | 5.34E+05 | 5.50E+05 | 6.14E+05 | 2.93E+05 | 7.06E+04 | 0 | 1.38E+04 | 0 | 0 | 0 | 0 | 1.95E+04 | 0 | 0 | 0 |

## Worcester, MA

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| Approach number | Altitude (m) Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number per cubic meter | | | | | | | | | | | | | | |
| 5 | 270 | | 2.77E+05 | 2.25E+05 | 3.33E+05 | 1.66E+05 | 3.17E+04 | 1.95E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 260 | | 1.94E+06 | 5.02E+06 | 7.22E+06 | 6.36E+06 | 3.30E+06 | 1.14E+06 | 1.11E+05 | 1.39E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 250 | | 9.96E+05 | 1.72E+06 | 2.61E+06 | 2.58E+06 | 1.13E+06 | 4.81E+05 | 6.84E+04 | 0 | 0 | 0 | 0 | 0 | 3.41E+04 | 0 | 0 |
| 5 | 240 | | 7.47E+05 | 1.14E+06 | 1.92E+06 | 1.69E+06 | 4.30E+05 | 1.23E+05 | 2.30E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 230 | | 5.78E+05 | 3.45E+05 | 7.01E+05 | 6.43E+05 | 2.81E+05 | 1.70E+05 | 5.34E+04 | 0 | 2.67E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 220 | | 1.38E+07 | 3.51E+07 | 4.36E+07 | 4.34E+07 | 9.52E+06 | 1.52E+06 | 4.62E+04 | 0 | 2.31E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 210 | | 8.97E+06 | 1.75E+07 | 1.68E+07 | 1.20E+07 | 4.04E+06 | 1.11E+06 | 3.37E+04 | 3.42E+04 | 0 | 3.37E+04 | 0 | 0 | 0 | 0 | 0 |
| 5 | 200 | | 1.89E+07 | 5.42E+07 | 5.36E+07 | 4.49E+07 | 1.07E+07 | 1.85E+06 | 6.83E+04 | 0 | 3.40E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 190 | | 4.01E+06 | 1.14E+07 | 1.91E+07 | 1.25E+07 | 2.32E+06 | 2.88E+05 | 6.57E+04 | 2.42E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 180 | | 2.30E+07 | 5.20E+07 | 1.26E+08 | 7.76E+07 | 1.31E+07 | 1.70E+06 | 9.96E+04 | 3.42E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 170 | | 2.87E+07 | 6.52E+07 | 1.75E+08 | 7.67E+07 | 9.43E+06 | 9.57E+05 | 9.94E+04 | 3.28E+04 | 3.31E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 160 | | 2.12E+07 | 5.82E+07 | 8.24E+07 | 3.05E+07 | 3.49E+06 | 4.64E+05 | 1.32E+05 | 2.22E+04 | 0 | 2.21E+04 | 0 | 0 | 0 | 0 | 2.21E+04 |
| 5 | 150 | | 2.27E+07 | 6.46E+07 | 9.91E+07 | 4.04E+07 | 4.90E+06 | 6.35E+05 | 1.10E+05 | 2.22E+04 | 4.38E+04 | 2.14E+04 | 2.22E+04 | 0 | 0 | 0 | 0 |
| 5 | 140 | | 2.99E+07 | 1.03E+08 | 1.55E+08 | 3.60E+07 | 4.27E+06 | 5.84E+05 | 3.35E+04 | 5.03E+04 | 0 | 0 | 1.68E+04 | 0 | 0 | 0 | 0 |
| 5 | 130 | | 3.80E+07 | 1.45E+08 | 1.76E+08 | 3.04E+07 | 3.68E+06 | 6.45E+05 | 2.66E+05 | 6.68E+04 | 4.42E+04 | 2.20E+04 | 2.22E+04 | 0 | 0 | 0 | 0 |
| 5 | 120 | | 3.87E+07 | 1.71E+08 | 1.21E+08 | 1.83E+07 | 2.02E+06 | 5.06E+05 | 2.19E+05 | 1.10E+05 | 2.17E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 110 | | 4.44E+07 | 1.76E+08 | 1.36E+08 | 1.85E+07 | 1.83E+06 | 2.67E+05 | 1.33E+05 | 6.65E+04 | 6.71E+04 | 0 | 0 | 3.29E+04 | 0 | 0 | 0 |
| 5 | 100 | | 5.43E+07 | 2.34E+08 | 1.03E+08 | 1.38E+07 | 1.45E+06 | 3.29E+05 | 1.32E+05 | 0 | 0 | 6.58E+04 | 3.28E+04 | 3.28E+04 | 0 | 0 | 0 |
| 5 | 90 | | 6.25E+07 | 2.82E+08 | 9.64E+07 | 1.01E+07 | 1.13E+06 | 5.32E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 80 | | 5.45E+07 | 1.80E+08 | 4.16E+07 | 5.88E+06 | 1.02E+06 | 6.62E+05 | 4.28E+05 | 1.31E+05 | 9.89E+04 | 3.28E+04 | 0 | 0 | 0 | 0 | 0 |
| 5 | 70 | | 2.86E+07 | 3.47E+07 | 4.72E+06 | 1.47E+06 | 1.07E+06 | 3.34E+05 | 3.35E+05 | 0 | 1.34E+05 | 3.35E+04 | 3.34E+04 | 3.35E+04 | 0 | 0 | 0 |
| 5 | 60 | | 4.09E+07 | 4.30E+07 | 6.79E+06 | 1.54E+06 | 1.08E+06 | 5.94E+05 | 3.15E+05 | 2.45E+05 | 1.75E+05 | 3.51E+04 | 0 | 3.48E+04 | 0 | 0 | 0 |
| 5 | 50 | | 3.25E+07 | 3.02E+07 | 4.09E+06 | 2.57E+06 | 1.61E+06 | 7.99E+05 | 4.19E+05 | 3.49E+05 | 2.06E+05 | 3.67E+04 | 3.32E+04 | 1.07E+05 | 0 | 0 | 0 |
| 5 | 40 | | 2.41E+07 | 1.76E+07 | 2.36E+06 | 2.14E+06 | 1.12E+06 | 8.32E+05 | 6.52E+05 | 2.72E+05 | 7.29E+04 | 6.67E+04 | 2.13E+04 | 0 | 0 | 2.13E+04 | 0 |
| 5 | 30 | | 1.54E+06 | 1.13E+06 | 7.52E+05 | 1.29E+06 | 6.62E+05 | 6.40E+05 | 1.32E+05 | 2.09E+05 | 9.41E+04 | 0 | 0 | 0 | 1.91E+04 | 0 | 0 |
| 5 | 20 | | 3.70E+05 | 5.97E+05 | 9.08E+05 | 1.22E+06 | 8.26E+05 | 2.56E+05 | 1.43E+05 | 5.68E+04 | 0 | 0 | 5.73E+04 | 0 | 0 | 0 | 0 |
| 5 | 10 | | 6.24E+05 | 5.28E+05 | 9.27E+05 | 1.45E+06 | 1.09E+06 | 6.79E+05 | 4.75E+05 | 2.03E+05 | 1.05E+05 | 6.15E+04 | 8.36E+04 | 2.25E+04 | 3205 | 0 | 4287 |

# Worcester, MA

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| Approach number | Altitude (m) Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number per cubic meter | | | | | | | | | | | | | | |
| | 172307 | 172437 | Size: 300 microns Range: 150 - 4650 microns | | | | | | | | | | | | | | |
| 1 | 310 | 450.6 | 7.479 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 300 | 418.3 | 27.49 | 5.237 | 2.765 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 290 | 578 | 3.753 | 0 | 8.297 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 280 | 534.2 | 18.79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 270 | 607.1 | 20.89 | 1.989 | 0 | 2.21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 260 | 648.5 | 24.84 | 2.001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 250 | 786.1 | 34.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 240 | 819.9 | 45.24 | 0 | 2.767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 230 | 1087 | 49.37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 220 | 947 | 56.2 | 7.862 | 0 | 4.385 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 210 | 884.2 | 42.59 | 2.616 | 2.749 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 200 | 1329 | 45.17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 190 | 1042 | 71.13 | 0 | 0 | 4.342 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 180 | 1377 | 48.91 | 3.995 | 2.047 | 4.367 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 170 | 1493 | 75.35 | 11.32 | 1.682 | 3.616 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 160 | 1661 | 68.19 | 5.311 | 0 | 2.939 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 150 | 1734 | 67.57 | 7.886 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 140 | 1822 | 85.85 | 3.95 | 0 | 0 | 4.564 | 4.85 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 130 | 1882 | 73.99 | 12.94 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 120 | 2021 | 108.4 | 7.86 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 110 | 2178 | 139.5 | 13.09 | 0 | 2.909 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 100 | 2087 | 176.3 | 7.838 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 90 | 2237 | 202.3 | 5.173 | 5.519 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 80 | 2257 | 276.4 | 13.29 | 0 | 0 | 3.143 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 70 | 1880 | 428.1 | 7.69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 60 | 1655 | 408.7 | 26.82 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 50 | 1977 | 363.5 | 19.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 40 | 2078 | 353.9 | 25.86 | 2.705 | 2.855 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 30 | 1971 | 439.9 | 22.9 | 4.019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 20 | 1915 | 398.4 | 19.53 | 4.113 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 10 | 2122 | 407.1 | 35.6 | 0.9521 | 2.033 | 0 | 1.143 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 173353 | 173553 | | | | | | | | | | | | | | | |
| 2 | 390 | 2349 | 265.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 380 | 2387 | 241 | 23.71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 370 | 2328 | 238.5 | 3.932 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 360 | 3302 | 235.5 | 15.46 | 4.075 | 4.302 | 0 | 4.839 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 350 | 3151 | 380.2 | 11.61 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 340 | 2284 | 331.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 330 | 1530 | 396.5 | 36.7 | 5.484 | 0 | 3.114 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 320 | 2296 | 666.9 | 285.8 | 34.2 | 2.264 | 4.795 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 310 | 2668 | 1205 | 130.9 | 8.64 | 9.055 | 2.412 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 300 | 2543 | 391.7 | 65.16 | 7.143 | 0 | 0 | 0 | 0 | 1.937 | 2.092 | 0 | 0 | 0 | 3.022 | 0 | 0 |
| 2 | 290 | 2553 | 112.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 280 | 1936 | 143.9 | 0 | 2.853 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 270 | 2189 | 91.27 | 10.65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 260 | 2380 | 80.63 | 0 | 5.579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 250 | 3235 | 167.4 | 2.648 | 2.812 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Number per cubic meter | | | | | | | | |
| 2 | 240 | 3323 | 276.4 | 8.01 | 0 | 0 | 2.364 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 230 | 3102 | 342.1 | 8.039 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 220 | 2932 | 339.5 | 13.39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 210 | 2977 | 234.3 | 5.42 | 5.684 | 3.011 | 0 | 0 | 0 | 3.873 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 200 | 3375 | 211.4 | 8.084 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 190 | 3559 | 208.8 | 3.982 | 8.395 | 0 | 4.685 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 180 | 3849 | 228.6 | 10.67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 170 | 4251 | 285.7 | 16.27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 160 | 4008 | 431 | 8.193 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 150 | 3634 | 493.8 | 8.134 | 2.88 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 140 | 3605 | 510.4 | 20.27 | 12.81 | 0 | 4.791 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 130 | 3246 | 411.8 | 8.081 | 4.276 | 4.514 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 120 | 3233 | 362 | 16.35 | 5.753 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 110 | 3407 | 372.8 | 19.94 | 4.211 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 100 | 3361 | 397.7 | 26.73 | 2.81 | 0 | 3.165 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 90 | 3831 | 339.7 | 10.71 | 2.81 | 5.975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 80 | 3606 | 384.4 | 2.693 | 5.737 | 2.992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 70 | 3442 | 249.2 | 8.178 | 4.329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 60 | 3552 | 376.5 | 20.11 | 0 | 0 | 0 | 0 | 5.365 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 50 | 3730 | 379.8 | 3.973 | 0 | 0 | 0 | 0 | 5.34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 40 | 3612 | 381.4 | 15.75 | 2.738 | 2.89 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 30 | 3330 | 386.4 | 21.32 | 2.798 | 2.986 | 0 | 3.322 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 20 | 3551 | 446.1 | 27.07 | 5.676 | 9.019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 10 | 3308 | 477.1 | 21.86 | 2.974 | 0.5942 | 0.6269 | 0 | 0 | 0 | 0 | 0.9712 | 0 | 0 | 0 | 0 |
| | 174509 | 174646 | | | | | | | | | | | | | | |
| 3 | 320 | 1801 | 83.93 | 8.012 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 310 | 1954 | 88.24 | 8.095 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 300 | 3464 | 98.58 | 2.037 | 0 | 2.263 | 2.396 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 290 | 4326 | 140.3 | 10.9 | 2.868 | 6.063 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 280 | 5524 | 411.2 | 4.049 | 6.366 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 270 | 6179 | 680.2 | 20.18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 260 | 5673 | 790.2 | 29.47 | 5.657 | 2.981 | 3.149 | 3.347 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 250 | 5313 | 1028 | 37.23 | 2.803 | 0 | 3.125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 240 | 4381 | 692.8 | 50.47 | 5.6 | 0 | 0 | 0 | 3.547 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 230 | 4866 | 470.2 | 23.88 | 8.417 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 220 | 5215 | 454.3 | 18.5 | 8.357 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 210 | 4963 | 361.5 | 21.39 | 2.805 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 200 | 5267 | 441.7 | 10.61 | 8.384 | 2.955 | 0 | 3.308 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 190 | 4941 | 617 | 26.47 | 11.16 | 11.75 | 3.106 | 3.318 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 180 | 4779 | 586.1 | 18.49 | 8.404 | 2.935 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 170 | 4169 | 738.3 | 27.84 | 4.174 | 13.24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 160 | 3613 | 628.5 | 29.04 | 2.784 | 2.938 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 150 | 3147 | 493.1 | 24.12 | 0 | 0 | 0 | 3.343 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 140 | 3310 | 316.7 | 13.42 | 0 | 0 | 3.149 | 3.353 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 130 | 3140 | 275.1 | 8.247 | 2.15 | 0 | 0 | 2.605 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 120 | 3067 | 243.3 | 2.658 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 110 | 3349 | 296.9 | 8.087 | 0 | 2.972 | 6.307 | 3.35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 100 | 3151 | 210.9 | 8.049 | 4.248 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Worcester, MA

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| Approach number | Altitude (m) Begin time | Bin 1 End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Number per cubic meter | | | | | | | | |
| 3 | 90 | 3337 | 360.4 | 11.86 | 4.181 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 80 | 3226 | 346.1 | 7.815 | 4.107 | 4.348 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 70 | 2947 | 331 | 3.945 | 4.153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 60 | 2948 | 331.5 | 5.266 | 2.808 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 50 | 3199 | 302.1 | 10.47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 40 | 3056 | 312.3 | 21.05 | 2.76 | 0 | 0 | 3.277 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 30 | 3239 | 344.4 | 16.16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 20 | 3535 | 259.8 | 12.62 | 4.404 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 10 | 3794 | 308.7 | 15.99 | 4.886 | 1.732 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 175527 | 175705 | | | | | | | | | | | | | | |
| 4 | 310 | 1738 | 95.26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 300 | 2044 | 144.2 | 5.502 | 2.888 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 290 | 2270 | 151.5 | 4.081 | 4.296 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 280 | 2937 | 347.9 | 8.095 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 270 | 3857 | 318.3 | 5.388 | 2.838 | 0 | 3.172 | 3.37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 260 | 4393 | 347.6 | 8.136 | 5.132 | 5.417 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 250 | 4931 | 592.1 | 22.17 | 8.527 | 2.237 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 240 | 5443 | 911.9 | 40.27 | 0 | 0 | 0 | 0 | 5.355 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 230 | 4981 | 934.8 | 34.88 | 0 | 0 | 3.153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 220 | 4438 | 966.6 | 55.85 | 11.18 | 0 | 6.249 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 210 | 3458 | 589.7 | 74 | 8.432 | 2.235 | 2.348 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 200 | 2745 | 288.5 | 21.91 | 0 | 0 | 0 | 4.986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 190 | 3473 | 299.7 | 24.19 | 0 | 4.497 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 180 | 3505 | 670.2 | 23.92 | 2.096 | 2.213 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 170 | 3621 | 587.8 | 56.18 | 4.228 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 160 | 3924 | 429.6 | 32.05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 150 | 4873 | 580.8 | 4.034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 140 | 4644 | 413.9 | 15.98 | 4.212 | 4.412 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 130 | 4999 | 461.9 | 12.03 | 4.181 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 120 | 4553 | 853.7 | 28.52 | 4.288 | 0 | 4.794 | 0 | 0 | 0 | 0 | 6.79 | 0 | 0 | 0 | 0 |
| 4 | 110 | 4835 | 857.6 | 40.04 | 0 | 4.491 | 0 | 5.055 | 5.39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 100 | 5304 | 1048 | 43.8 | 0 | 4.422 | 0 | 4.975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 90 | 4992 | 837.5 | 32.01 | 6.294 | 2.194 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 80 | 4766 | 776.4 | 48.15 | 3.382 | 0 | 0 | 0 | 0 | 0 | 0 | 2.678 | 0 | 0 | 0 | 0 |
| 4 | 70 | 4496 | 585 | 40.41 | 0 | 0 | 0 | 5.05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 60 | 4638 | 615.1 | 40.37 | 0 | 0 | 0 | 3.35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 50 | 4415 | 772.2 | 63.96 | 8.781 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 40 | 4795 | 666.8 | 56.42 | 0 | 9.437 | 3.347 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 30 | 4824 | 737.1 | 69.22 | 0 | 4.789 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 20 | 4589 | 749.1 | 56.78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 10 | 5094 | 844 | 40.68 | 4.881 | 1.451 | 2.312 | 2.34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 180622 | 180800 | | | | | | | | | | | | | | |
| 5 | 330 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 320 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 310 | 4.347 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 290 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 280 | 3.19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | Bin 1 End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number per cubic meter | | | | | | | | | | | | | |
| 5 | 270 | 6.36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 260 | 10.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 250 | 6.43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 240 | 38.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 230 | 50.41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 220 | 67.56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 210 | 24.88 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 200 | 43.26 | 3.69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 190 | 126 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 180 | 148.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 170 | 300 | 0 | 3.832 | 0 | 0 | 4.508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 160 | 318.3 | 2.451 | 2.536 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 150 | 474.3 | 4.861 | 0 | 0 | 0 | 2.976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 140 | 326.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 130 | 703.2 | 17.11 | 2.583 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 120 | 268.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 110 | 457.6 | 7.125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 100 | 469.6 | 24.84 | 3.706 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 90 | 668.4 | 7.132 | 0 | 0 | 8.321 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 80 | 1184 | 34.74 | 3.693 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 70 | 1051 | 17.27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 60 | 2164 | 42.22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 50 | 2707 | 114.3 | 3.618 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 40 | 2474 | 111.6 | 0 | 2.563 | 0 | 2.871 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 30 | 1592 | 36.02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 20 | 1786 | 62.8 | 3.861 | 8.13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 10 | 3446 | 332.3 | 6.336 | 2.012 | 0 | 0 | 1.082 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| | 172307 | 172437 | | | | | | |
| 1 | 310 | | 09.7 | 9.23 | 1 | 0.01 | 22.8 | 007.40 |
| 1 | 300 | | 09.7 | 9.23 | 3 | 0.02 | 71.0 | 010.28 |
| 1 | 290 | | 09.7 | 9.23 | 2 | 0.04 | 21.3 | 019.74 |
| 1 | 280 | | 09.7 | 9.23 | 2 | 0.03 | 08.3 | 022.32 |
| 1 | 270 | | 09.7 | 9.23 | 4 | 0.06 | 07.4 | 046.10 |
| 1 | 260 | | 09.7 | 9.23 | 4 | 0.05 | 07.2 | 042.05 |
| 1 | 250 | | 09.7 | 9.23 | 4 | 0.08 | 07.3 | 061.71 |
| 1 | 240 | | 09.7 | 9.23 | 3 | 0.16 | 06.9 | 129.86 |
| 1 | 230 | | 09.7 | 9.23 | 2 | 0.22 | 06.7 | 185.91 |
| 1 | 220 | | 09.7 | 9.23 | 2 | 0.20 | 06.8 | 164.77 |
| 1 | 210 | | 09.4 | 9.07 | 3 | 0.17 | 06.3 | 167.88 |
| 1 | 200 | | 09.7 | 9.23 | 2 | 0.25 | 05.7 | 304.92 |
| 1 | 190 | | 08.9 | 8.77 | 2 | 0.17 | 05.7 | 229.08 |
| 1 | 180 | | 08.9 | 8.77 | 4 | 0.17 | 05.6 | 232.78 |
| 1 | 170 | | 09.1 | 8.86 | 5 | 0.24 | 05.6 | 331.94 |
| 1 | 160 | | 08.9 | 8.77 | 3 | 0.23 | 05.6 | 317.65 |
| 1 | 150 | | 08.9 | 8.77 | 2 | 0.17 | 06.0 | 205.92 |
| 1 | 140 | | 08.9 | 8.77 | 2 | 0.23 | 05.8 | 319.02 |
| 1 | 130 | | 08.9 | 8.77 | 3 | 0.18 | 05.1 | 311.45 |
| 1 | 120 | | 08.9 | 8.77 | 2 | 0.19 | 04.8 | 371.43 |
| 1 | 110 | | 08.9 | 8.77 | 3 | 0.21 | 04.8 | 410.91 |
| 1 | 100 | | 08.9 | 8.77 | 5 | 0.17 | 05.2 | 325.30 |
| 1 | 90 | | 08.9 | 8.77 | 3 | 0.17 | 05.5 | 353.55 |
| 1 | 80 | | 08.9 | 8.77 | 3 | 0.22 | 05.1 | 484.59 |
| 1 | 70 | | 08.9 | 8.77 | 2 | 0.16 | 13.5 | 282.97 |
| 1 | 60 | | 08.4 | 8.52 | 2 | 0.12 | 142.6 | 114.61 |
| 1 | 50 | | 08.4 | 8.52 | 2 | 0.15 | 30.8 | 293.90 |
| 1 | 40 | | 08.9 | 8.77 | 3 | 0.15 | 75.9 | 352.09 |
| 1 | 30 | | 08.9 | 8.77 | 2 | 0.12 | 161.2 | 088.23 |
| 1 | 20 | | 08.9 | 8.77 | 2 | 0.12 | 137.9 | 141.09 |
| 1 | 10 | | 08.9 | 8.77 | 9 | 0.12 | 179.0 | 040.82 |
| | 173353 | 173553 | | | | | | |
| 2 | 390 | | 11.4 | 10.28 | 1 | 0.08 | 110.0 | 021.73 |
| 2 | 380 | | 11.4 | 10.28 | 2 | 0.09 | 116.1 | 014.31 |
| 2 | 370 | | 11.4 | 10.28 | 2 | 0.08 | 109.6 | 013.21 |
| 2 | 360 | | 10.9 | 9.99 | 2 | 0.14 | 146.4 | 015.72 |
| 2 | 350 | | 10.5 | 9.71 | 2 | 0.11 | 131.8 | 013.65 |
| 2 | 340 | | 10.5 | 9.71 | 1 | 0.09 | 120.6 | 018.06 |
| 2 | 330 | | 10.5 | 9.71 | 3 | 0.11 | 209.2 | 015.88 |
| 2 | 320 | | 10.5 | 9.71 | 4 | 0.29 | 316.1 | 025.55 |
| 2 | 310 | | 10.5 | 9.71 | 4 | 0.29 | 227.4 | 038.94 |
| 2 | 300 | | 10.5 | 9.71 | 6 | 0.33 | 1231.8 | 049.63 |
| 2 | 290 | | 09.7 | 9.23 | 2 | 0.12 | 09.5 | 061.26 |

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September 26, 1992

| Approach number | Altitude (m) *Begin time* | *End time* | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 2 | 280 | | 09.7 | 9.23 | 3 | 0.13 | 08.9 | 067.30 |
| 2 | 270 | | 09.7 | 9.23 | 3 | 0.10 | 11.6 | 061.27 |
| 2 | 260 | | 09.7 | 9.23 | 3 | 0.12 | 08.2 | 084.01 |
| 2 | 250 | | 09.7 | 9.23 | 3 | 0.16 | 09.2 | 087.82 |
| 2 | 240 | | 09.7 | 9.23 | 4 | 0.19 | 11.5 | 104.54 |
| 2 | 230 | | 09.4 | 9.07 | 3 | 0.17 | 23.5 | 094.18 |
| 2 | 220 | | 08.9 | 8.77 | 3 | 0.18 | 14.6 | 102.52 |
| 2 | 210 | | 08.9 | 8.77 | 3 | 0.25 | 17.8 | 142.41 |
| 2 | 200 | | 08.9 | 8.77 | 3 | 0.20 | 07.1 | 170.81 |
| 2 | 190 | | 08.9 | 8.77 | 2 | 0.14 | 93.6 | 060.91 |
| 2 | 180 | | 08.9 | 8.77 | 3 | 0.16 | 32.7 | 128.58 |
| 2 | 170 | | 08.9 | 8.77 | 3 | 0.24 | 07.5 | 199.72 |
| 2 | 160 | | 08.9 | 8.77 | 4 | 0.31 | 06.4 | 305.20 |
| 2 | 150 | | 08.9 | 8.77 | 3 | 0.27 | 07.2 | 285.95 |
| 2 | 140 | | 08.9 | 8.77 | 2 | 0.26 | 51.4 | 220.83 |
| 2 | 130 | | 08.9 | 8.77 | 2 | 0.25 | 07.7 | 265.82 |
| 2 | 120 | | 08.9 | 8.77 | 3 | 0.24 | 06.4 | 320.91 |
| 2 | 110 | | 08.9 | 8.77 | 2 | 0.22 | 08.5 | 281.62 |
| 2 | 100 | | 08.9 | 8.77 | 3 | 0.21 | 46.2 | 284.59 |
| 2 | 90 | | 08.9 | 8.77 | 3 | 0.23 | 14.0 | 329.01 |
| 2 | 80 | | 08.9 | 8.77 | 3 | 0.22 | 10.3 | 404.42 |
| 2 | 70 | | 08.9 | 8.77 | 2 | 0.18 | 10.0 | 378.27 |
| 2 | 60 | | 08.9 | 8.77 | 2 | 0.22 | 95.3 | 341.93 |
| 2 | 50 | | 08.9 | 8.77 | 2 | 0.18 | 130.8 | 199.49 |
| 2 | 40 | | 08.6 | 8.60 | 3 | 0.13 | 129.5 | 075.60 |
| 2 | 30 | | 08.9 | 8.77 | 3 | 0.15 | 150.1 | 114.10 |
| 2 | 20 | | 08.9 | 8.77 | 3 | 0.16 | 156.2 | 066.88 |
| 2 | 10 | | 09.2 | 8.97 | 16 | 0.16 | 173.9 | 024.08 |
| | 174509 | 174646 | | | | | | |
| 3 | 320 | | 10.5 | 9.71 | 1 | 0.05 | 90.1 | 011.53 |
| 3 | 310 | | 10.1 | 9.47 | 2 | 0.06 | 82.6 | 011.20 |
| 3 | 300 | | 10.1 | 9.47 | 4 | 0.09 | 94.6 | 015.19 |
| 3 | 290 | | 09.7 | 9.23 | 3 | 0.11 | 99.9 | 019.89 |
| 3 | 280 | | 09.7 | 9.23 | 4 | 0.16 | 105.9 | 038.71 |
| 3 | 270 | | 09.7 | 9.23 | 2 | 0.25 | 91.7 | 108.32 |
| 3 | 260 | | 09.7 | 9.23 | 3 | 0.30 | 130.1 | 098.33 |
| 3 | 250 | | 09.7 | 9.23 | 3 | 0.30 | 137.5 | 100.71 |
| 3 | 240 | | 09.4 | 9.07 | 3 | 0.36 | 39.4 | 229.38 |
| 3 | 230 | | 09.4 | 9.07 | 3 | 0.30 | 09.2 | 206.60 |
| 3 | 220 | | 08.9 | 8.77 | 3 | 0.22 | 71.7 | 101.32 |
| 3 | 210 | | 08.9 | 8.77 | 3 | 0.19 | 70.3 | 096.53 |
| 3 | 200 | | 08.9 | 8.77 | 3 | 0.25 | 74.7 | 115.06 |
| 3 | 190 | | 08.9 | 8.77 | 3 | 0.26 | 158.7 | 082.36 |
| 3 | 180 | | 08.9 | 8.77 | 3 | 0.25 | 80.3 | 141.42 |

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| Approach number | Altitude (m) *Begin time* | *End time* | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 3 | 170 | | 08.9 | 8.77 | 2 | 0.34 | 39.6 | 272.65 |
| 3 | 160 | | 08.9 | 8.77 | 3 | 0.27 | 38.6 | 203.01 |
| 3 | 150 | | 08.9 | 8.77 | 3 | 0.30 | 06.9 | 310.16 |
| 3 | 140 | | 08.9 | 8.77 | 3 | 0.28 | 06.4 | 313.88 |
| 3 | 130 | | 08.9 | 8.77 | 4 | 0.28 | 05.7 | 389.90 |
| 3 | 120 | | 08.9 | 8.77 | 3 | 0.19 | 06.2 | 258.17 |
| 3 | 110 | | 08.9 | 8.77 | 3 | 0.26 | 09.2 | 355.85 |
| 3 | 100 | | 08.9 | 8.77 | 2 | 0.18 | 05.7 | 359.19 |
| 3 | 90 | | 08.9 | 8.77 | 2 | 0.17 | 46.4 | 285.75 |
| 3 | 80 | | 08.9 | 8.77 | 2 | 0.16 | 74.6 | 265.30 |
| 3 | 70 | | 08.9 | 8.77 | 2 | 0.12 | 95.6 | 135.83 |
| 3 | 60 | | 08.9 | 8.77 | 3 | 0.14 | 69.7 | 292.03 |
| 3 | 50 | | 08.9 | 8.77 | 3 | 0.14 | 63.5 | 267.73 |
| 3 | 40 | | 08.9 | 8.77 | 3 | 0.13 | 141.3 | 082.57 |
| 3 | 30 | | 08.9 | 8.77 | 3 | 0.11 | 126.6 | 012.47 |
| 3 | 20 | | 08.9 | 8.77 | 2 | 0.10 | 126.0 | 009.80 |
| 3 | 10 | | 09.4 | 9.07 | 12 | 0.11 | 130.7 | 006.45 |
| | 175527 | 175705 | | | | | | |
| 4 | 310 | | 10.5 | 9.71 | 2 | 0.04 | 96.5 | 006.19 |
| 4 | 300 | | 10.5 | 9.71 | 3 | 0.06 | 110.2 | 012.82 |
| 4 | 290 | | 10.5 | 9.71 | 2 | 0.07 | 105.4 | 010.93 |
| 4 | 280 | | 10.5 | 9.71 | 2 | 0.10 | 127.1 | 024.54 |
| 4 | 270 | | 10.0 | 9.39 | 3 | 0.15 | 127.7 | 039.45 |
| 4 | 260 | | 09.7 | 9.23 | 5 | 0.23 | 35.2 | 139.47 |
| 4 | 250 | | 09.7 | 9.23 | 4 | 0.25 | 84.2 | 101.35 |
| 4 | 240 | | 09.7 | 9.23 | 2 | 0.34 | 130.3 | 119.91 |
| 4 | 230 | | 09.7 | 9.23 | 3 | 0.31 | 98.2 | 136.00 |
| 4 | 220 | | 09.7 | 9.23 | 3 | 0.34 | 126.5 | 143.82 |
| 4 | 210 | | 09.7 | 9.23 | 4 | 0.25 | 115.3 | 109.72 |
| 4 | 200 | | 09.5 | 9.11 | 4 | 0.13 | 148.1 | 029.26 |
| 4 | 190 | | 08.9 | 8.77 | 2 | 0.20 | 29.3 | 128.89 |
| 4 | 180 | | 08.9 | 8.77 | 4 | 0.25 | 65.4 | 165.45 |
| 4 | 170 | | 08.9 | 8.77 | 2 | 0.30 | 12.1 | 257.20 |
| 4 | 160 | | 08.9 | 8.77 | 3 | 0.27 | 07.2 | 279.70 |
| 4 | 150 | | 08.9 | 8.77 | 2 | 0.24 | 49.1 | 209.66 |
| 4 | 140 | | 08.9 | 8.77 | 2 | 0.24 | 39.8 | 242.92 |
| 4 | 130 | | 08.9 | 8.77 | 2 | 0.26 | 17.7 | 317.43 |
| 4 | 120 | | 08.9 | 8.77 | 2 | 0.45 | 191.5 | 352.01 |
| 4 | 110 | | 08.9 | 8.77 | 2 | 0.38 | 141.4 | 357.38 |
| 4 | 100 | | 08.9 | 8.77 | 2 | 0.35 | 134.5 | 354.07 |
| 4 | 90 | | 08.9 | 8.77 | 4 | 0.28 | 108.7 | 317.54 |
| 4 | 80 | | 08.9 | 8.77 | 5 | 0.33 | 139.2 | 404.15 |
| 4 | 70 | | 08.9 | 8.77 | 2 | 0.22 | 139.3 | 202.69 |
| 4 | 60 | | 08.9 | 8.77 | 3 | 0.20 | 157.8 | 054.32 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) *Begin time* | *End time* | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 4 | 50 | | 08.9 | 8.77 | 3 | 0.21 | 172,6 | 069.83 |
| 4 | 40 | | 08.9 | 8.77 | 3 | 0.22 | 180.2 | 064.34 |
| 4 | 30 | | 08.9 | 8.77 | 2 | 0.20 | 183.3 | 012.88 |
| 4 | 20 | | 09.3 | 9.00 | 2 | 0.19 | 168.2 | 014.09 |
| 4 | 10 | | 09.7 | 9.23 | 15 | 0.24 | 177.6 | 010.34 |
| | 180622 | 180800 | | | | | | |
| 5 | 330 | | 10.5 | 9.71 | 3 | 0.00 | 10.9 | 000.58 |
| 5 | 320 | | 10.5 | 9.71 | 2 | 0.00 | 05.7 | 001.60 |
| 5 | 310 | | 10.5 | 9.71 | 3 | 0.00 | 12.4 | 002.30 |
| 5 | 300 | | 10.5 | 9.71 | 2 | 0.00 | 05.4 | 002.13 |
| 5 | 290 | | 10.5 | 9.71 | 2 | 0.00 | 07.7 | 000.61 |
| 5 | 280 | | 10.7 | 9.85 | 4 | 0.00 | 06.7 | 002.09 |
| 5 | 270 | | 10.7 | 9.85 | 4 | 0.00 | 05.6 | 001.05 |
| 5 | 260 | | 11.4 | 10.28 | 5 | 0.02 | 06.3 | 025.11 |
| 5 | 250 | | 10.9 | 9.99 | 2 | 0.01 | 06.7 | 009.61 |
| 5 | 240 | | 10.5 | 9.71 | 3 | 0.00 | 05.9 | 006.07 |
| 5 | 230 | | 10.5 | 9.71 | 3 | 0.00 | 08.1 | 002.80 |
| 5 | 220 | | 10.5 | 9.71 | 3 | 0.09 | 05.5 | 147.01 |
| 5 | 210 | | 10.5 | 9.71 | 2 | 0.04 | 05.7 | 060.59 |
| 5 | 200 | | 10.5 | 9.71 | 2 | 0.11 | 05.4 | 184.27 |
| 5 | 190 | | 10.5 | 9.71 | 3 | 0.03 | 05.4 | 049.72 |
| 5 | 180 | | 10.5 | 9.71 | 2 | 0.18 | 05.2 | 293.63 |
| 5 | 170 | | 10.5 | 9.71 | 2 | 0.21 | 05.1 | 355.64 |
| 5 | 160 | | 10.0 | 9.39 | 3 | 0.09 | 04.8 | 196.47 |
| 5 | 150 | | 09.7 | 9.23 | 3 | 0.13 | 05.1 | 232.55 |
| 5 | 140 | | 09.7 | 9.23 | 4 | 0.14 | 04.4 | 329.56 |
| 5 | 130 | | 09.7 | 9.23 | 3 | 0.16 | 04.3 | 393.62 |
| 5 | 120 | | 09.7 | 9.23 | 3 | 0.11 | 04.1 | 351.98 |
| 5 | 110 | | 09.7 | 9.23 | 2 | 0.12 | 04.1 | 376.41 |
| 5 | 100 | | 09.7 | 9.23 | 2 | 0.11 | 04.0 | 407.23 |
| 5 | 90 | | 09.7 | 9.23 | 1 | 0.12 | 04.0 | 452.71 |
| 5 | 80 | | 09.7 | 9.23 | 2 | 0.08 | 04.4 | 284.44 |
| 5 | 70 | | 09.7 | 9.23 | 2 | 0.03 | 17.5 | 071.38 |
| 5 | 60 | | 09.7 | 9.23 | 2 | 0.06 | 49.3 | 094.63 |
| 5 | 50 | | 09.7 | 9.23 | 2 | 0.08 | 66.4 | 072.87 |
| 5 | 40 | | 09.7 | 9.23 | 3 | 0.08 | 93.5 | 049.27 |
| 5 | 30 | | 09.7 | 9.23 | 3 | 0.04 | 71.9 | 006.47 |
| 5 | 20 | | 09.7 | 9.23 | 2 | 0.05 | 110.1 | 004.44 |
| 5 | 10 | | 10.7 | 9.83 | 15 | 0.11 | 128.3 | 006.26 |

# Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | Bin 1 End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Number per cubic meter | | | | | | | | |
| | 211540 | 211718 | | | | | | Size: 3 microns | Range: 2-47 microns | | | | | | | |
| 6 | 310 | 9.86E+06 | 1.02E+07 | 6.25E+07 | 7.45E+07 | 3.63E+06 | 8.21E+05 | 0 | 1.37E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 300 | 9.68E+06 | 1.59E+07 | 9.41E+07 | 6.00E+07 | 2.78E+06 | 7.03E+05 | 3.01E+05 | 6.70E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 290 | 1.10E+07 | 3.43E+07 | 1.13E+08 | 2.11E+07 | 1.75E+06 | 1.91E+05 | 3.46E+04 | 0 | 0 | 1.71E+04 | 0 | 1.75E+04 | 0 | 0 | 0 |
| 6 | 280 | 9.23E+06 | 3.41E+07 | 7.47E+07 | 1.78E+07 | 1.50E+06 | 4.35E+05 | 1.17E+05 | 4.69E+04 | 1.16E+04 | 1.16E+04 | 0 | 0 | 0 | 0 | 0 |
| 6 | 270 | 1.24E+07 | 4.40E+07 | 9.38E+07 | 2.99E+07 | 3.97E+06 | 1.33E+06 | 6.39E+05 | 3.55E+05 | 4.75E+04 | 0 | 0 | 0 | 2.35E+04 | 0 | 0 |
| 6 | 260 | 1.43E+07 | 4.23E+07 | 1.32E+08 | 3.66E+07 | 6.41E+06 | 3.25E+06 | 1.48E+06 | 4.24E+05 | 9.42E+04 | 2.33E+04 | 2.38E+04 | 0 | 0 | 0 | 0 |
| 6 | 250 | 1.33E+07 | 3.79E+07 | 1.16E+08 | 4.58E+07 | 7.89E+06 | 2.51E+06 | 1.44E+06 | 2.79E+05 | 6.95E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 240 | 1.41E+07 | 5.80E+07 | 8.36E+07 | 2.88E+07 | 1.37E+07 | 3.93E+06 | 5.93E+05 | 2.27E+05 | 4.58E+04 | 4.56E+04 | 0 | 0 | 0 | 2.31E+04 | 0 |
| 6 | 230 | 1.33E+07 | 5.13E+07 | 3.68E+07 | 7.31E+06 | 2.03E+06 | 7.71E+05 | 3.88E+05 | 1.40E+05 | 3.55E+04 | 0 | 1.05E+05 | 0 | 0 | 0 | 0 |
| 6 | 220 | 1.16E+07 | 2.97E+07 | 1.46E+07 | 6.04E+06 | 3.35E+06 | 1.59E+06 | 1.76E+05 | 1.76E+05 | 3.52E+04 | 0 | 0 | 3.52E+04 | 0 | 0 | 0 |
| 6 | 210 | 1.57E+07 | 4.55E+07 | 5.95E+07 | 3.70E+07 | 1.34E+07 | 3.06E+06 | 3.50E+05 | 2.33E+04 | 0 | 0 | 2.33E+04 | 0 | 0 | 0 | 0 |
| 6 | 200 | 1.41E+07 | 2.44E+07 | 2.96E+07 | 3.05E+07 | 1.14E+07 | 2.86E+06 | 7.32E+05 | 9.28E+04 | 4.64E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 190 | 1.31E+07 | 3.86E+07 | 3.93E+07 | 4.28E+07 | 1.56E+07 | 3.12E+06 | 5.27E+05 | 1.20E+05 | 9.65E+04 | 2.37E+04 | 0 | 0 | 0 | 0 | 0 |
| 6 | 180 | 1.55E+07 | 4.27E+07 | 4.05E+07 | 3.82E+07 | 1.41E+07 | 2.98E+06 | 6.98E+05 | 2.20E+05 | 1.84E+05 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 170 | 1.05E+07 | 3.07E+07 | 4.19E+07 | 4.75E+07 | 1.48E+07 | 3.38E+06 | 4.40E+05 | 1.17E+05 | 2.37E+04 | 0 | 0 | 0 | 0 | 2.37E+04 | 0 |
| 6 | 160 | 1.23E+07 | 2.93E+07 | 6.08E+07 | 5.71E+07 | 1.33E+07 | 2.32E+06 | 2.95E+05 | 4.21E+04 | 1.42E+04 | 1.43E+04 | 0 | 1.39E+04 | 0 | 0 | 0 |
| 6 | 150 | 9.07E+06 | 2.07E+07 | 4.33E+07 | 3.09E+07 | 6.14E+06 | 1.32E+06 | 1.59E+05 | 5.27E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 140 | 1.62E+07 | 4.27E+07 | 1.01E+08 | 5.21E+07 | 1.04E+07 | 1.98E+06 | 4.24E+05 | 2.12E+05 | 2.35E+04 | 2.39E+04 | 2.35E+04 | 2.35E+04 | 0 | 0 | 0 |
| 6 | 130 | 1.41E+07 | 4.63E+07 | 7.47E+07 | 3.48E+07 | 6.17E+06 | 1.03E+06 | 2.35E+05 | 7.02E+04 | 2.35E+04 | 0 | 0 | 0 | 2.35E+04 | 2.34E+04 | 0 |
| 6 | 120 | 1.84E+07 | 6.15E+07 | 1.10E+08 | 4.31E+07 | 7.64E+06 | 1.57E+06 | 1.79E+05 | 1.79E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 110 | 1.98E+07 | 7.57E+07 | 1.31E+08 | 2.83E+07 | 4.63E+06 | 6.97E+05 | 7.14E+04 | 9.56E+04 | 0 | 2.42E+04 | 0 | 0 | 0 | 2.42E+04 | 0 |
| 6 | 100 | 1.54E+07 | 6.18E+07 | 6.63E+07 | 1.28E+07 | 2.20E+06 | 3.51E+05 | 7.02E+04 | 7.03E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 90 | 2.47E+07 | 1.25E+08 | 9.19E+07 | 1.38E+07 | 2.24E+06 | 4.91E+05 | 3.47E+04 | 3.52E+04 | 3.52E+04 | 0 | 0 | 0 | 0 | 3.47E+04 | 0 |
| 6 | 80 | 1.94E+07 | 5.79E+07 | 2.94E+07 | 5.59E+06 | 1.15E+06 | 2.77E+05 | 6.89E+04 | 1.15E+05 | 2.30E+04 | 2.30E+04 | 0 | 0 | 0 | 0 | 2.30E+04 |
| 6 | 70 | 3.87E+07 | 7.38E+07 | 3.49E+07 | 6.99E+06 | 7.16E+05 | 3.56E+05 | 1.43E+05 | 4.74E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 60 | 8.10E+07 | 8.00E+07 | 1.75E+07 | 1.78E+06 | 7.60E+05 | 3.26E+05 | 3.60E+04 | 7.20E+04 | 3.60E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 50 | 2.48E+07 | 3.33E+07 | 1.37E+07 | 2.66E+06 | 6.14E+05 | 1.38E+05 | 4.72E+04 | 0 | 6.85E+04 | 4.72E+04 | 0 | 0 | 0 | 0 | 2.44E+04 |
| 6 | 40 | 4.68E+07 | 5.28E+07 | 1.02E+07 | 1.39E+06 | 4.00E+05 | 1.64E+05 | 3.63E+04 | 3.67E+04 | 0 | 0 | 1.81E+04 | 0 | 0 | 0 | 0 |
| 6 | 30 | 3.08E+07 | 3.51E+07 | 8.08E+06 | 1.25E+06 | 3.18E+05 | 1.71E+05 | 7.30E+04 | 7.37E+04 | 0 | 0 | 0 | 2.51E+04 | 0 | 0 | 0 |
| 6 | 20 | 1.47E+06 | 1.82E+06 | 8.77E+05 | 8.74E+05 | 1.69E+05 | 0 | 3.11E+04 | 3.11E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 10 | 6.40E+05 | 7.63E+05 | 6.48E+05 | 2.73E+05 | 1.15E+05 | 1.51E+05 | 4.79E+04 | 5.01E+04 | 2.73E+04 | 1.82E+04 | 0 | 0 | 0 | 4565 | 0 |
| | 212617 | 212806 | | | | | | | | | | | | | | |
| 7 | 340 | 7.18E+06 | 9.61E+06 | 2.10E+07 | 7.17E+07 | 2.77E+07 | 1.26E+07 | 9.01E+06 | 5.01E+06 | 2.66E+06 | 1.14E+06 | 4.14E+05 | 5.51E+05 | 1.04E+05 | 3.47E+04 | 0 |
| 7 | 330 | 7.59E+06 | 7.10E+06 | 1.54E+07 | 9.11E+07 | 3.10E+07 | 6.99E+06 | 4.05E+06 | 2.27E+06 | 3.46E+05 | 3.10E+05 | 1.03E+05 | 3.41E+04 | 3.48E+04 | 0 | 0 |
| 7 | 320 | 1.12E+07 | 1.15E+07 | 2.87E+07 | 8.06E+07 | 3.37E+07 | 1.24E+07 | 5.91E+06 | 2.25E+06 | 7.74E+05 | 1.76E+05 | 1.41E+05 | 7.06E+04 | 3.50E+04 | 0 | 0 |
| 7 | 310 | 1.31E+07 | 2.56E+07 | 5.16E+07 | 7.47E+07 | 5.41E+07 | 1.26E+07 | 3.89E+06 | 1.96E+06 | 6.52E+05 | 2.75E+05 | 1.03E+05 | 6.91E+04 | 0 | 0 | 0 |
| 7 | 300 | 1.59E+07 | 4.09E+07 | 5.87E+07 | 5.56E+07 | 2.51E+07 | 4.32E+06 | 1.41E+06 | 3.51E+05 | 3.52E+04 | 3.52E+04 | 0 | 3.52E+04 | 0 | 0 | 0 |
| 7 | 290 | 1.57E+07 | 3.91E+07 | 3.97E+07 | 1.49E+07 | 4.95E+06 | 2.95E+06 | 1.76E+06 | 5.27E+05 | 2.46E+05 | 7.05E+04 | 6.98E+04 | 3.49E+04 | 0 | 0 | 0 |
| 7 | 280 | 1.03E+07 | 1.64E+07 | 3.89E+07 | 3.24E+07 | 9.62E+06 | 4.18E+06 | 2.75E+06 | 1.12E+06 | 2.79E+05 | 1.05E+05 | 3.50E+04 | 3.48E+04 | 3.48E+04 | 0 | 0 |
| 7 | 270 | 1.29E+07 | 2.97E+07 | 4.64E+07 | 3.35E+07 | 1.61E+07 | 5.59E+06 | 1.46E+06 | 3.81E+05 | 2.35E+05 | 5.47E+04 | 1.81E+04 | 0 | 0 | 0 | 0 |
| 7 | 260 | 1.15E+07 | 2.16E+07 | 4.48E+07 | 5.54E+07 | 2.28E+07 | 5.45E+06 | 1.26E+06 | 2.77E+05 | 1.08E+05 | 0 | 1.20E+04 | 0 | 0 | 1.20E+04 | 0 |
| 7 | 250 | 1.10E+07 | 3.98E+07 | 4.47E+07 | 2.02E+07 | 1.14E+07 | 6.39E+06 | 3.81E+06 | 1.69E+06 | 3.23E+05 | 1.41E+05 | 8.08E+04 | 3.00E+04 | 2.01E+04 | 1.97E+04 | 0 |
| 7 | 240 | 9.36E+06 | 3.12E+07 | 3.47E+07 | 1.80E+07 | 1.36E+07 | 1.16E+07 | 5.43E+06 | 1.96E+06 | 6.53E+05 | 4.65E+04 | 6.98E+04 | 0 | 0 | 0 | 0 |
| 7 | 230 | 1.20E+07 | 3.32E+07 | 3.31E+07 | 2.70E+07 | 2.21E+07 | 1.23E+07 | 4.42E+06 | 1.12E+06 | 1.86E+05 | 9.26E+04 | 4.62E+04 | 0 | 0 | 0 | 0 |
| 7 | 220 | 1.38E+07 | 2.71E+07 | 3.02E+07 | 4.84E+07 | 3.09E+07 | 9.57E+06 | 2.15E+06 | 6.37E+05 | 3.47E+04 | 3.47E+04 | 0 | 0 | 0 | 0 | 0 |
| 7 | 210 | 9.28E+06 | 2.08E+07 | 2.96E+07 | 4.21E+07 | 2.48E+07 | 9.56E+06 | 3.28E+06 | 1.13E+06 | 4.93E+05 | 7.11E+04 | 0 | 3.43E+04 | 3.43E+04 | 0 | 0 |
| 7 | 200 | 1.32E+07 | 2.99E+07 | 4.00E+07 | 5.23E+07 | 2.38E+07 | 9.46E+06 | 2.18E+06 | 1.13E+06 | 3.41E+05 | 0 | 0 | 3.41E+04 | 0 | 0 | 0 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Number per cubic meter | | | | | | | | | | | | | | |
| | *Begin time* | *End time* | | | | | | | | | | | | | | |
| 7 | 190 | 1.16E+07 | 2.82E+07 | 4.41E+07 | 5.98E+07 | 2.78E+07 | 9.43E+06 | 2.01E+06 | 3.24E+05 | 1.39E+05 | 0 | 4.63E+04 | 0 | 2.33E+04 | 0 | 2.29E+04 |
| 7 | 180 | 8.43E+06 | 1.82E+07 | 3.15E+07 | 3.95E+07 | 1.61E+07 | 6.22E+06 | 1.65E+06 | 7.20E+05 | 2.03E+05 | 8.99E+04 | 2.30E+04 | 2.25E+04 | 0 | 0 | 0 |
| 7 | 170 | 1.36E+07 | 2.90E+07 | 7.00E+07 | 7.37E+07 | 2.05E+07 | 5.28E+06 | 1.23E+06 | 2.34E+05 | 0 | 4.67E+04 | 0 | 0 | 0 | 0 | 0 |
| 7 | 160 | 1.24E+07 | 2.56E+07 | 6.42E+07 | 6.33E+07 | 1.64E+07 | 4.54E+06 | 7.33E+05 | 2.44E+05 | 1.05E+05 | 1.74E+04 | 1.74E+04 | 0 | 0 | 0 | 0 |
| 7 | 150 | 1.62E+07 | 3.71E+07 | 8.66E+07 | 7.02E+07 | 1.77E+07 | 4.06E+06 | 6.05E+05 | 1.96E+05 | 1.08E+05 | 1.83E+04 | 0 | 0 | 1.75E+04 | 0 | 1.80E+04 |
| 7 | 140 | 1.71E+07 | 3.89E+07 | 1.14E+08 | 7.19E+07 | 1.63E+07 | 4.10E+06 | 9.12E+05 | 2.16E+05 | 4.79E+04 | 0 | 2.38E+04 | 0 | 0 | 0 | 0 |
| 7 | 130 | 1.63E+07 | 4.52E+07 | 9.99E+07 | 5.87E+07 | 1.42E+07 | 3.54E+06 | 7.28E+05 | 1.46E+05 | 7.28E+04 | 0 | 0 | 2.44E+04 | 0 | 4.82E+04 | 0 |
| 7 | 120 | 2.15E+07 | 7.41E+07 | 1.10E+08 | 4.12E+07 | 7.52E+06 | 1.09E+06 | 2.14E+05 | 1.18E+05 | 0 | 4.77E+04 | 0 | 0 | 0 | 0 | 0 |
| 7 | 110 | 2.67E+07 | 1.03E+08 | 1.54E+08 | 3.92E+07 | 6.27E+06 | 1.15E+06 | 2.65E+05 | 9.68E+04 | 4.77E+04 | 4.70E+04 | 0 | 0 | 0 | 0 | 0 |
| 7 | 100 | 2.39E+07 | 1.08E+08 | 1.53E+08 | 3.56E+07 | 6.01E+06 | 9.55E+05 | 7.05E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 90 | 2.74E+07 | 1.18E+08 | 1.51E+08 | 3.51E+07 | 6.12E+06 | 8.17E+05 | 2.15E+05 | 4.78E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 80 | 2.70E+07 | 1.23E+08 | 1.53E+08 | 3.15E+07 | 4.93E+06 | 7.85E+05 | 2.86E+05 | 3.57E+04 | 0 | 3.57E+04 | 3.57E+04 | 0 | 0 | 0 | 0 |
| 7 | 70 | 2.81E+07 | 1.38E+08 | 1.43E+08 | 3.31E+07 | 5.30E+06 | 7.60E+05 | 1.78E+05 | 7.05E+04 | 7.41E+04 | 0 | 0 | 3.53E+04 | 0 | 0 | 0 |
| 7 | 60 | 3.31E+07 | 1.30E+08 | 1.14E+08 | 2.49E+07 | 3.62E+06 | 9.60E+05 | 2.46E+05 | 1.06E+05 | 0 | 3.52E+04 | 0 | 0 | 0 | 0 | 0 |
| 7 | 50 | 5.17E+07 | 1.04E+08 | 5.42E+07 | 9.90E+06 | 1.57E+06 | 1.66E+05 | 1.19E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 40 | 2.85E+07 | 4.13E+07 | 1.39E+07 | 2.85E+06 | 7.85E+05 | 2.19E+05 | 9.12E+04 | 5.45E+04 | 0 | 1.83E+04 | 0 | 0 | 0 | 0 | 0 |
| 7 | 30 | 5.26E+07 | 6.27E+07 | 1.59E+07 | 2.23E+06 | 5.57E+05 | 1.53E+05 | 1.00E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 20 | 4.22E+07 | 3.91E+07 | 8.06E+06 | 1.53E+06 | 6.92E+05 | 9.67E+04 | 4.54E+04 | 2.27E+04 | 0 | 2.57E+04 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10 | 1.03E+06 | 1.84E+06 | 1.08E+06 | 2.96E+05 | 1.14E+05 | 1.07E+05 | 8.90E+04 | 2.71E+04 | 1.77E+04 | 1.07E+04 | 0 | 0 | 6304 | 0 | 0 |
| | 213851 | 214043 | | | | | | | | | | | | | | |
| 8 | 370 | 1.16E+07 | 5.56E+07 | 6.94E+07 | 1.90E+07 | 8.94E+06 | 6.33E+06 | 4.09E+06 | 3.38E+06 | 2.25E+06 | 1.78E+06 | 6.35E+05 | 2.34E+05 | 6.70E+04 | 3.32E+04 | 3.38E+04 |
| 8 | 360 | 1.48E+07 | 4.59E+07 | 9.67E+07 | 2.58E+07 | 1.19E+07 | 8.08E+06 | 3.61E+06 | 2.38E+06 | 2.55E+06 | 1.82E+06 | 7.29E+05 | 3.62E+05 | 6.62E+04 | 9.96E+04 | 0 |
| 8 | 350 | 1.57E+07 | 6.32E+07 | 1.07E+08 | 1.67E+07 | 9.57E+06 | 4.07E+06 | 2.72E+06 | 2.14E+06 | 1.67E+06 | 1.32E+06 | 5.50E+05 | 2.87E+05 | 1.10E+05 | 8.87E+04 | 0 |
| 8 | 340 | 1.80E+07 | 9.76E+07 | 7.65E+07 | 1.20E+07 | 6.49E+06 | 2.94E+06 | 1.90E+06 | 1.93E+06 | 1.21E+06 | 5.89E+05 | 2.39E+05 | 1.71E+05 | 1.39E+05 | 0 | 0 |
| 8 | 330 | 3.82E+07 | 6.14E+07 | 1.51E+07 | 6.23E+06 | 5.58E+06 | 3.92E+06 | 3.19E+06 | 2.88E+06 | 2.22E+06 | 1.04E+06 | 4.25E+05 | 1.41E+05 | 1.64E+05 | 4.66E+04 | 0 |
| 8 | 320 | 7.68E+06 | 1.43E+07 | 1.61E+07 | 1.22E+07 | 6.54E+06 | 3.94E+06 | 2.75E+06 | 2.32E+06 | 1.82E+06 | 8.17E+05 | 5.88E+05 | 2.05E+05 | 1.16E+05 | 9.13E+04 | 0 |
| 8 | 310 | 8.50E+06 | 1.59E+07 | 1.82E+07 | 1.42E+07 | 7.75E+06 | 3.73E+06 | 1.97E+06 | 1.90E+06 | 9.87E+05 | 7.75E+05 | 3.76E+05 | 1.41E+05 | 9.39E+04 | 0 | 0 |
| 8 | 300 | 3.90E+06 | 7.77E+06 | 8.06E+06 | 6.67E+06 | 4.75E+06 | 2.71E+06 | 1.72E+06 | 1.60E+06 | 9.49E+05 | 5.88E+05 | 4.14E+05 | 9.14E+04 | 7.02E+04 | 4.70E+04 | 2.12E+04 |
| 8 | 290 | 3.52E+06 | 8.33E+06 | 9.22E+06 | 7.20E+06 | 4.38E+06 | 3.68E+06 | 2.14E+06 | 1.67E+06 | 9.59E+05 | 5.65E+05 | 2.52E+05 | 4.39E+04 | 4.57E+04 | 2.20E+04 | 2.37E+04 |
| 8 | 280 | 3.61E+06 | 7.73E+06 | 8.95E+06 | 7.92E+06 | 4.75E+06 | 3.89E+06 | 2.11E+06 | 1.14E+06 | 4.26E+05 | 2.47E+05 | 1.36E+05 | 2.27E+04 | 4.59E+04 | 0 | 0 |
| 8 | 270 | 1.12E+07 | 2.46E+07 | 8.90E+06 | 5.96E+06 | 4.60E+06 | 2.69E+06 | 1.36E+06 | 5.07E+05 | 1.60E+05 | 1.14E+05 | 2.26E+04 | 2.35E+04 | 2.35E+04 | 0 | 2.26E+04 |
| 8 | 260 | 3.56E+06 | 5.20E+06 | 4.62E+06 | 5.82E+06 | 4.93E+06 | 2.88E+06 | 1.41E+06 | 4.03E+05 | 1.16E+05 | 4.73E+04 | 2.30E+04 | 0 | 0 | 0 | 0 |
| 8 | 250 | 4.60E+06 | 7.75E+06 | 5.98E+06 | 7.54E+06 | 5.77E+06 | 4.93E+06 | 2.52E+06 | 8.59E+05 | 2.45E+05 | 8.82E+04 | 3.50E+04 | 0 | 1.80E+04 | 0 | 0 |
| 8 | 240 | 2.37E+06 | 6.51E+06 | 6.78E+06 | 7.53E+06 | 5.70E+06 | 3.58E+06 | 1.90E+06 | 5.60E+05 | 2.74E+05 | 0 | 2.22E+04 | 0 | 0 | 0 | 0 |
| 8 | 230 | 7.75E+06 | 2.23E+07 | 1.63E+07 | 1.03E+07 | 8.35E+06 | 6.42E+06 | 3.33E+06 | 9.75E+05 | 2.32E+05 | 1.16E+05 | 4.57E+04 | 2.28E+04 | 4.62E+04 | 2.28E+04 | 2.34E+04 |
| 8 | 220 | 5.90E+06 | 1.15E+07 | 8.25E+06 | 1.08E+07 | 9.60E+06 | 8.65E+06 | 4.92E+06 | 1.97E+06 | 4.22E+05 | 9.08E+04 | 7.03E+04 | 0 | 2.23E+04 | 0 | 0 |
| 8 | 210 | 8.02E+06 | 1.57E+07 | 1.19E+07 | 1.39E+07 | 1.19E+07 | 9.37E+06 | 4.34E+06 | 1.31E+06 | 2.10E+05 | 1.40E+05 | 2.34E+04 | 4.68E+04 | 0 | 0 | 2.35E+04 |
| 8 | 200 | 1.00E+07 | 2.29E+07 | 2.79E+07 | 2.93E+07 | 1.79E+07 | 8.58E+06 | 2.91E+06 | 8.51E+05 | 1.60E+05 | 1.24E+05 | 0 | 1.78E+04 | 1.77E+04 | 0 | 0 |
| 8 | 190 | 6.96E+06 | 1.24E+07 | 2.59E+07 | 4.22E+07 | 2.31E+07 | 1.08E+07 | 4.80E+06 | 2.03E+06 | 3.50E+05 | 7.00E+04 | 0 | 1.05E+05 | 3.50E+04 | 0 | 0 |
| 8 | 180 | 1.14E+07 | 2.08E+07 | 4.63E+07 | 7.06E+07 | 2.69E+07 | 9.95E+06 | 2.93E+06 | 5.67E+05 | 2.13E+05 | 4.71E+04 | 0 | 2.35E+04 | 0 | 2.38E+04 | 0 |
| 8 | 170 | 1.12E+07 | 2.25E+07 | 5.43E+07 | 6.55E+07 | 2.32E+07 | 7.58E+06 | 1.60E+06 | 4.21E+05 | 1.40E+05 | 4.70E+04 | 4.67E+04 | 0 | 0 | 0 | 0 |
| 8 | 160 | 1.47E+07 | 2.94E+07 | 7.39E+07 | 7.53E+07 | 2.31E+07 | 7.86E+06 | 2.17E+06 | 3.81E+05 | 1.43E+05 | 2.37E+04 | 0 | 7.15E+04 | 0 | 0 | 0 |
| 8 | 150 | 1.17E+07 | 2.56E+07 | 6.30E+07 | 6.11E+07 | 2.17E+07 | 8.12E+06 | 2.58E+06 | 5.21E+05 | 2.37E+05 | 0 | 2.37E+04 | 7.11E+04 | 0 | 0 | 0 |
| 8 | 140 | 1.96E+07 | 4.76E+07 | 1.24E+08 | 7.94E+07 | 1.95E+07 | 6.08E+06 | 1.62E+06 | 2.63E+05 | 9.51E+04 | 0 | 0 | 0 | 0 | 0 | 2.37E+04 |
| 8 | 130 | 2.18E+07 | 5.91E+07 | 1.35E+08 | 6.25E+07 | 1.57E+07 | 5.26E+06 | 1.26E+06 | 4.03E+05 | 2.37E+05 | 0 | 4.75E+04 | 4.75E+04 | 2.36E+04 | 0 | 0 |
| 8 | 120 | 2.35E+07 | 7.87E+07 | 1.37E+08 | 5.31E+07 | 1.00E+07 | 2.06E+06 | 2.49E+05 | 1.42E+05 | 3.57E+04 | 3.57E+04 | 0 | 3.55E+04 | 0 | 0 | 0 |
| 8 | 110 | 2.62E+07 | 1.05E+08 | 1.29E+08 | 3.88E+07 | 7.56E+06 | 1.30E+06 | 4.48E+05 | 4.72E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 100 | 2.84E+07 | 1.26E+08 | 1.65E+08 | 3.68E+07 | 7.41E+06 | 1.90E+06 | 7.36E+05 | 2.33E+05 | 3.57E+04 | 5.38E+04 | 1.79E+04 | 0 | 0 | 1.82E+04 | 0 |

## Worcester, MA

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| Approach number | Altitude (m) Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number per cubic meter | | | | | | | | | | | | | | |
| 8 | 90 | | 2.89E+07 | 1.25E+08 | 1.64E+08 | 3.45E+07 | 6.61E+06 | 1.72E+06 | 5.15E+05 | 2.34E+05 | 6.99E+04 | 2.33E+04 | 0 | 2.33E+04 | 0 | 0 | 0 |
| 8 | 80 | | 2.58E+07 | 9.74E+07 | 9.77E+07 | 3.05E+07 | 6.16E+06 | 1.46E+06 | 2.44E+05 | 2.44E+05 | 6.97E+04 | 0 | 0 | 3.46E+04 | 0 | 0 | 0 |
| 8 | 70 | | 4.04E+07 | 1.40E+08 | 9.85E+07 | 2.37E+07 | 4.29E+06 | 1.17E+06 | 3.01E+05 | 7.08E+04 | 1.78E+04 | 1.77E+04 | 0 | 0 | 0 | 0 | 0 |
| 8 | 60 | | 4.10E+07 | 1.46E+08 | 8.78E+07 | 1.75E+07 | 3.75E+06 | 1.24E+06 | 4.97E+05 | 4.59E+05 | 1.42E+05 | 7.03E+04 | 3.51E+04 | 0 | 0 | 0 | 0 |
| 8 | 50 | | 6.03E+07 | 1.87E+08 | 8.18E+07 | 1.35E+07 | 3.14E+06 | 1.16E+06 | 2.47E+05 | 1.07E+05 | 3.55E+04 | 3.51E+04 | 3.51E+04 | 0 | 3.55E+04 | 0 | 0 |
| 8 | 40 | | 5.83E+07 | 1.47E+08 | 5.22E+07 | 9.23E+06 | 1.92E+06 | 1.12E+06 | 2.80E+05 | 3.49E+04 | 0 | 0 | 0 | 0 | 0 | 3.49E+04 | 0 |
| 8 | 30 | | 4.35E+07 | 8.18E+07 | 3.33E+07 | 6.45E+06 | 1.40E+06 | 1.02E+06 | 4.21E+05 | 2.47E+05 | 1.37E+05 | 6.87E+04 | 0 | 3.43E+04 | 0 | 3.43E+04 | 0 |
| 8 | 20 | | 3.91E+07 | 4.76E+07 | 1.85E+07 | 3.85E+06 | 8.23E+05 | 5.74E+05 | 1.43E+05 | 3.51E+04 | 7.13E+04 | 3.62E+04 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10 | | 5.52E+06 | 7.13E+06 | 3.60E+06 | 1.76E+06 | 7.36E+05 | 4.11E+05 | 2.86E+05 | 1.46E+05 | 1.93E+04 | 5.00E+04 | 1.92E+04 | 0 | 1.29E+04 | 6495 | 6619 |

## Worcester, MA

September 26, 1992

Number per cubic meter

Size: 300 microns Range: 150 - 4650 microns

| Approach number | Altitude (m) | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Begin time* | *End time* | | | | | | | | | | | | | | |
| | 211540 | 211718 | | | | | | | | | | | | | | |
| 6 | 310 | 78.32 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 300 | 85.69 | 35.36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 290 | 106.1 | 51.55 | 2.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 280 | 31.63 | 39.17 | 1.409 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 270 | 8.977 | 24.14 | 2.829 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 260 | 13.37 | 13.34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 250 | 13.25 | 7.91 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 240 | 0 | 5.244 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 230 | 26.19 | 7.825 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 220 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 210 | 4.49 | 0 | 2.774 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 200 | 22.26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 190 | 4.483 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 180 | 6.725 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 170 | 22.39 | 2.672 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 160 | 21.55 | 6.428 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 150 | 13.49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 140 | 13.48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 130 | 49.43 | 2.682 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 120 | 52.83 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 110 | 53.83 | 2.622 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 100 | 92.81 | 0 | 0 | 2.918 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 90 | 60.33 | 3.985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 80 | 253.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 70 | 218.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 60 | 207.7 | 4.041 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 50 | 451.2 | 5.293 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 40 | 418 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 30 | 446.5 | 2.715 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 20 | 417.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 10 | 674.9 | 32.65 | 5.374 | 0.9527 | 2.024 | 1.038 | 1.131 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 212617 | 212806 | | | | | | | | | | | | | | |
| | 340 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 330 | 6.51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 320 | 13.05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 310 | 6.56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 300 | 53.11 | 0 | 4.142 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 290 | 32.87 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 280 | 13.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 270 | 37.23 | 12.15 | 2.143 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 260 | 36.31 | 4.089 | 1.42 | 0 | 1.583 | 1.672 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 250 | 13.49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 240 | 4.457 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 230 | 8.877 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 220 | 33.06 | 11.85 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 210 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 200 | 0 | 3.92 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | Bin 1 End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Number per cubic meter | | | | | | | | |
| 7 | 190 | 4.403 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 180 | 13.09 | 5.22 | 2.74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 170 | 8.843 | 2.642 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 160 | 29.93 | 1.976 | 2.107 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 150 | 16.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 140 | 13.61 | 0 | 2.847 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 130 | 22.68 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 120 | 35.63 | 2.638 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 110 | 4.59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 100 | 0 | 0 | 4.229 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 90 | 4.537 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 80 | 40.71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 70 | 13.67 | 4.051 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 60 | 13.53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 50 | 17.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 40 | 9.912 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 30 | 22.46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 20 | 36.97 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10 | 107.8 | 10.02 | 3.493 | 2.185 | 0.7743 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 213851 | 214043 | | | | | | | | | | | | | | |
| 8 | 370 | 31.44 | 3.753 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 360 | 62.5 | 3.734 | 11.76 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 350 | 12.52 | 14.94 | 7.87 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 340 | 43.87 | 22.49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 330 | 54.99 | 7.61 | 7.965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 320 | 63.87 | 12.73 | 0 | 0 | 0 | 0 | 0 | 3.563 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 310 | 51.39 | 15.36 | 8.049 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 300 | 43.3 | 38.82 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 290 | 43.32 | 7.769 | 2.715 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 280 | 30.31 | 28.46 | 2.716 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 270 | 26.02 | 20.72 | 8.162 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 260 | 8.747 | 28.78 | 8.261 | 2.902 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 250 | 36.38 | 25.69 | 18.67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 240 | 30.92 | 21.14 | 16.64 | 2.922 | 3.084 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 230 | 31.06 | 21.18 | 16.67 | 11.71 | 0 | 3.277 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 220 | 17.71 | 23.79 | 19.43 | 2.916 | 3.087 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 210 | 22.13 | 26.43 | 11.09 | 14.61 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 200 | 26.55 | 19.86 | 27.05 | 4.373 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 190 | 19.77 | 11.81 | 8.255 | 4.356 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 180 | 22.06 | 23.73 | 19.32 | 29.16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 170 | 13.28 | 5.263 | 13.81 | 2.903 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 160 | 22.06 | 5.269 | 13.89 | 2.936 | 0 | 0 | 3.45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 150 | 31.03 | 13.25 | 13.92 | 0 | 3.095 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 140 | 53.66 | 18.7 | 11.22 | 5.903 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 130 | 13.46 | 0 | 8.437 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 120 | 73.83 | 0 | 4.186 | 4.406 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 110 | 13.23 | 5.273 | 2.767 | 11.71 | 6.208 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 100 | 37.12 | 8.051 | 6.345 | 8.932 | 4.714 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | End time | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number per cubic meter | | | | | | | | | | | | | | |
| 8 | 90 | 44.64 | 5.423 | 0 | 14.7 | 3.089 | 0 | 0 | 0 | 0 | 0 | 0 | 5.177 | 0 | 0 | 0 |
| 8 | 80 | 33 | 0 | 4.112 | 8.707 | 4.569 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 70 | 27.05 | 9.986 | 4.332 | 2.197 | 7.044 | 2.455 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 60 | 19.87 | 7.885 | 4.189 | 0 | 4.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 50 | 45.65 | 11.69 | 4.094 | 0 | 0 | 0 | 5.115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 40 | 33.04 | 3.952 | 0 | 0 | 9.22 | 4.869 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 30 | 12.96 | 0 | 0 | 4.273 | 4.524 | 4.775 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 20 | 19.39 | 3.934 | 0 | 0 | 0 | 4.86 | 5.165 | 5.405 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10 | 103.8 | 16.79 | 0.779 | 0.7447 | 3.357 | 0.8967 | 0.9592 | 0 | 2.209 | 0 | 0 | 0 | 0 | 0 | 0 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| | 211540 | 211718 | | | | | | |
| 6 | 310 | | 10.5 | 9.71 | 1 | 0.13 | 5.41 | 161.661 |
| 6 | 300 | | 10.5 | 9.71 | 2 | 0.12 | 5.14 | 183.445 |
| 6 | 290 | | 10.5 | 9.71 | 4 | 0.09 | 4.44 | 181.500 |
| 6 | 280 | | 10.5 | 9.71 | 6 | 0.07 | 4.54 | 137.984 |
| 6 | 270 | | 10.5 | 9.71 | 3 | 0.10 | 4.88 | 186.425 |
| 6 | 260 | | 10.0 | 9.39 | 3 | 0.14 | 4.94 | 237.045 |
| 6 | 250 | | 09.7 | 9.23 | 3 | 0.14 | 5.14 | 225.467 |
| 6 | 240 | | 09.7 | 9.23 | 3 | 0.12 | 5.53 | 203.048 |
| 6 | 230 | | 09.7 | 9.23 | 2 | 0.04 | 4.60 | 112.166 |
| 6 | 220 | | 09.7 | 9.23 | 2 | 0.03 | 6.02 | 067.369 |
| 6 | 210 | | 09.7 | 9.23 | 3 | 0.11 | 5.62 | 174.556 |
| 6 | 200 | | 09.7 | 9.23 | 3 | 0.09 | 5.98 | 113.718 |
| 6 | 190 | | 09.7 | 9.23 | 3 | 0.11 | 5.88 | 153.293 |
| 6 | 180 | | 09.7 | 9.23 | 2 | 0.11 | 5.89 | 155.028 |
| 6 | 170 | | 09.7 | 9.23 | 3 | 0.12 | 5.83 | 149.332 |
| 6 | 160 | | 09.7 | 9.23 | 5 | 0.13 | 5.57 | 175.506 |
| 6 | 150 | | 09.7 | 9.23 | 4 | 0.07 | 5.38 | 111.658 |
| 6 | 140 | | 09.4 | 9.07 | 3 | 0.14 | 5.23 | 225.100 |
| 6 | 130 | | 08.9 | 8.77 | 3 | 0.10 | 5.07 | 177.464 |
| 6 | 120 | | 08.9 | 8.77 | 2 | 0.13 | 4.90 | 242.465 |
| 6 | 110 | | 08.9 | 8.77 | 3 | 0.11 | 4.41 | 260.251 |
| 6 | 100 | | 08.9 | 8.77 | 3 | 0.06 | 4.36 | 158.999 |
| 6 | 90 | | 08.9 | 8.77 | 2 | 0.08 | 4.09 | 258.615 |
| 6 | 80 | | 08.9 | 8.77 | 3 | 0.04 | 4.38 | 113.918 |
| 6 | 70 | | 08.9 | 8.77 | 3 | 0.04 | 4.12 | 155.658 |
| 6 | 60 | | 08.9 | 8.77 | 2 | 0.03 | 3.58 | 181.429 |
| 6 | 50 | | 08.9 | 8.77 | 3 | 0.03 | 5.50 | 075.447 |
| 6 | 40 | | 08.9 | 8.77 | 4 | 0.02 | 4.14 | 111.907 |
| 6 | 30 | | 08.9 | 8.77 | 3 | 0.02 | 5.52 | 075.896 |
| 6 | 20 | | 08.9 | 8.77 | 2 | 0.01 | 61.47 | 005.267 |
| 6 | 10 | | 09.6 | 9.19 | 11 | 0.03 | 281.80 | 002.738 |
| | 212617 | 212806 | | | | | | |
| 7 | 340 | | 11.4 | 10.28 | 2 | 0.34 | 8.86 | 168.643 |
| 7 | 330 | | 11.4 | 10.28 | 2 | 0.24 | 6.66 | 166.286 |
| 7 | 320 | | 11.4 | 10.28 | 2 | 0.27 | 7.10 | 187.376 |
| 7 | 310 | | 11.4 | 10.28 | 2 | 0.30 | 6.92 | 238.727 |
| 7 | 300 | | 11.4 | 10.28 | 2 | 0.17 | 6.09 | 202.474 |
| 7 | 290 | | 10.5 | 9.71 | 2 | 0.08 | 6.25 | 120.043 |
| 7 | 280 | | 10.5 | 9.71 | 2 | 0.12 | 6.64 | 116.188 |
| 7 | 270 | | 10.5 | 9.71 | 4 | 0.13 | 6.42 | 146.323 |
| 7 | 260 | | 10.5 | 9.71 | 6 | 0.16 | 6.29 | 163.151 |
| 7 | 250 | | 10.3 | 9.57 | 7 | 0.13 | 7.57 | 139.679 |
| 7 | 240 | | 09.7 | 9.23 | 3 | 0.16 | 8.25 | 126.616 |

## Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 7 | 230 | | 09.7 | 9.23 | 3 | 0.17 | 7.51 | 145.394 |
| 7 | 220 | | 09.7 | 9.23 | 2 | 0.18 | 6.79 | 162.752 |
| 7 | 210 | | 09.7 | 9.23 | 2 | 0.17 | 7.10 | 141.139 |
| 7 | 200 | | 09.7 | 9.23 | 2 | 0.18 | 6.68 | 172.307 |
| 7 | 190 | | 09.7 | 9.23 | 3 | 0.19 | 6.49 | 183.475 |
| 7 | 180 | | 09.7 | 9.23 | 3 | 0.13 | 6.61 | 122.598 |
| 7 | 170 | | 09.7 | 9.23 | 3 | 0.18 | 5.81 | 213.554 |
| 7 | 160 | | 09.7 | 9.23 | 4 | 0.15 | 5.77 | 187.580 |
| 7 | 150 | | 09.7 | 9.23 | 4 | 0.17 | 5.62 | 232.986 |
| 7 | 140 | | 09.7 | 9.23 | 3 | 0.18 | 5.47 | 263.420 |
| 7 | 130 | | 09.7 | 9.23 | 3 | 0.16 | 5.45 | 238.816 |
| 7 | 120 | | 09.4 | 9.07 | 3 | 0.12 | 4.81 | 255.356 |
| 7 | 110 | | 09.4 | 9.07 | 3 | 0.14 | 4.48 | 330.161 |
| 7 | 100 | | 09.3 | 9.00 | 2 | 0.14 | 4.41 | 326.910 |
| 7 | 90 | | 09.2 | 8.92 | 3 | 0.14 | 4.38 | 338.592 |
| 7 | 80 | | 09.3 | 9.00 | 2 | 0.14 | 4.32 | 340.836 |
| 7 | 70 | | 08.9 | 8.77 | 2 | 0.14 | 4.35 | 348.338 |
| 7 | 60 | | 08.9 | 8.77 | 2 | 0.11 | 4.28 | 307.110 |
| 7 | 50 | | 08.9 | 8.77 | 3 | 0.06 | 3.95 | 221.883 |
| 7 | 40 | | 09.1 | 8.88 | 4 | 0.02 | 3.99 | 087.738 |
| 7 | 30 | | 08.9 | 8.77 | 3 | 0.02 | 3.42 | 134.182 |
| 7 | 20 | | 09.7 | 9.23 | 3 | 0.01 | 3.58 | 091.808 |
| 7 | 10 | | 09.6 | 9.20 | 14 | 0.01 | 243.38 | 004.617 |
| | 213851 | 214043 | | | | | | |
| 8 | 370 | | 11.4 | 10.28 | 2 | 0.22 | 10.14 | 183.383 |
| 8 | 360 | | 11.4 | 10.28 | 2 | 0.25 | 9.29 | 214.683 |
| 8 | 350 | | 11.4 | 10.28 | 3 | 0.21 | 8.80 | 225.121 |
| 8 | 340 | | 11.4 | 10.28 | 2 | 0.15 | 7.72 | 219.640 |
| 8 | 330 | | 11.4 | 10.28 | 3 | 0.15 | 11.50 | 140.560 |
| 8 | 320 | | 11.4 | 10.28 | 3 | 0.16 | 12.42 | 069.441 |
| 8 | 310 | | 11.4 | 10.28 | 3 | 0.12 | 10.27 | 074.645 |
| 8 | 300 | | 11.4 | 10.28 | 3 | 0.09 | 11.56 | 039.356 |
| 8 | 290 | | 11.4 | 10.28 | 3 | 0.09 | 10.69 | 042.044 |
| 8 | 280 | | 11.4 | 10.28 | 3 | 0.07 | 9.39 | 040.961 |
| 8 | 270 | | 11.4 | 10.28 | 3 | 0.05 | 8.53 | 060.157 |
| 8 | 260 | | 10.5 | 9.71 | 3 | 0.05 | 8.78 | 029.004 |
| 8 | 250 | | 10.9 | 9.99 | 4 | 0.07 | 9.08 | 040.337 |
| 8 | 240 | | 10.5 | 9.71 | 3 | 0.07 | 9.26 | 035.220 |
| 8 | 230 | | 10.5 | 9.71 | 3 | 0.12 | 9.47 | 076.271 |
| 8 | 220 | | 10.5 | 9.71 | 3 | 0.13 | 9.35 | 062.229 |
| 8 | 210 | | 10.5 | 9.71 | 3 | 0.14 | 8.87 | 076.793 |
| 8 | 200 | | 10.5 | 9.71 | 4 | 0.15 | 7.55 | 120.680 |
| 8 | 190 | | 10.5 | 9.71 | 2 | 0.20 | 7.62 | 128.680 |
| 8 | 180 | | 10.5 | 9.71 | 3 | 0.24 | 6.97 | 189.766 |

Worcester, MA

September 26, 1992

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 8 | 170 | | 10.0 | 9.39 | 3 | 0.19 | 6.24 | 186.497 |
| 8 | 160 | | 10.2 | 9.55 | 3 | 0.23 | 6.25 | 227.092 |
| 8 | 150 | | 09.7 | 9.23 | 3 | 0.20 | 6.42 | 194.708 |
| 8 | 140 | | 09.7 | 9.23 | 3 | 0.23 | 5.69 | 298.552 |
| 8 | 130 | | 09.7 | 9.23 | 3 | 0.20 | 5.47 | 300.978 |
| 8 | 120 | | 09.7 | 9.23 | 2 | 0.16 | 5.00 | 304.842 |
| 8 | 110 | | 09.7 | 9.23 | 3 | 0.16 | 4.96 | 308.302 |
| 8 | 100 | | 09.7 | 9.23 | 4 | 0.18 | 4.69 | 366.164 |
| 8 | 90 | | 09.7 | 9.23 | 3 | 0.30 | 11.26 | 361.466 |
| 8 | 80 | | 09.7 | 9.23 | 2 | 0.13 | 5.05 | 259.574 |
| 8 | 70 | | 09.7 | 9.23 | 4 | 0.13 | 4.73 | 308.219 |
| 8 | 60 | | 09.7 | 9.23 | 2 | 0.11 | 4.53 | 298.353 |
| 8 | 50 | | 09.3 | 9.00 | 2 | 0.12 | 4.59 | 346.858 |
| 8 | 40 | | 08.9 | 8.77 | 2 | 0.10 | 5.25 | 269.912 |
| 8 | 30 | | 08.9 | 8.77 | 2 | 0.08 | 8.17 | 168.346 |
| 8 | 20 | | 09.3 | 9.00 | 2 | 0.11 | 968.26 | 110.753 |
| 8 | 10 | | 09.6 | 9.19 | 12 | 0.05 | 933.89 | 019.691 |

## Worcester, MA

September 26, 1992 (FSP 100 Only last three columns)

| Approach number | Altitude (m) *Begin time* | *End time* | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| | 211540 | 211718 | | | | | | |
| 6 | 310 | | 10.5 | 9.71 | 1 | 0.12 | 5.31 | 161.661 |
| 6 | 300 | | 10.5 | 9.71 | 2 | 0.12 | 5.07 | 183.445 |
| 6 | 290 | | 10.5 | 9.71 | 4 | 0.08 | 4.32 | 181.500 |
| 6 | 280 | | 10.5 | 9.71 | 6 | 0.06 | 4.42 | 137.984 |
| 6 | 270 | | 10.5 | 9.71 | 3 | 0.10 | 4.78 | 186.425 |
| 6 | 260 | | 10.0 | 9.39 | 3 | 0.14 | 4.90 | 237.045 |
| 6 | 250 | | 09.7 | 9.23 | 3 | 0.14 | 5.12 | 225.467 |
| 6 | 240 | | 09.7 | 9.23 | 3 | 0.12 | 5.51 | 203.048 |
| 6 | 230 | | 09.7 | 9.23 | 2 | 0.04 | 4.54 | 112.166 |
| 6 | 220 | | 09.7 | 9.23 | 2 | 0.03 | 6.02 | 067.369 |
| 6 | 210 | | 09.7 | 9.23 | 3 | 0.11 | 5.60 | 174.556 |
| 6 | 200 | | 09.7 | 9.23 | 3 | 0.08 | 5.97 | 113.718 |
| 6 | 190 | | 09.7 | 9.23 | 3 | 0.11 | 5.88 | 153.293 |
| 6 | 180 | | 09.7 | 9.23 | 2 | 0.11 | 5.88 | 155.028 |
| 6 | 170 | | 09.7 | 9.23 | 3 | 0.12 | 5.82 | 149.332 |
| 6 | 160 | | 09.7 | 9.23 | 5 | 0.13 | 5.56 | 175.506 |
| 6 | 150 | | 09.7 | 9.23 | 4 | 0.07 | 5.38 | 111.658 |
| 6 | 140 | | 09.4 | 9.07 | 3 | 0.14 | 5.22 | 225.100 |
| 6 | 130 | | 08.9 | 8.77 | 3 | 0.10 | 5.05 | 177.464 |
| 6 | 120 | | 08.9 | 8.77 | 2 | 0.13 | 4.88 | 242.465 |
| 6 | 110 | | 08.9 | 8.77 | 3 | 0.11 | 4.40 | 260.251 |
| 6 | 100 | | 08.9 | 8.77 | 3 | 0.06 | 4.26 | 158.999 |
| 6 | 90 | | 08.9 | 8.77 | 2 | 0.08 | 4.07 | 258.615 |
| 6 | 80 | | 08.9 | 8.77 | 3 | 0.03 | 4.18 | 113.918 |
| 6 | 70 | | 08.9 | 8.77 | 3 | 0.04 | 3.97 | 155.658 |
| 6 | 60 | | 08.9 | 8.77 | 2 | 0.03 | 3.26 | 181.429 |
| 6 | 50 | | 08.9 | 8.77 | 3 | 0.02 | 4.23 | 075.446 |
| 6 | 40 | | 08.9 | 8.77 | 4 | 0.02 | 3.20 | 111.906 |
| 6 | 30 | | 08.9 | 8.77 | 3 | 0.01 | 3.65 | 075.895 |
| 6 | 20 | | 08.9 | 8.77 | 2 | 0.00 | 5.54 | 005.267 |
| 6 | 10 | | 09.6 | 9.19 | 11 | 0.00 | 9.20 | 002.738 |
| | 212617 | 212806 | | | | | | |
| 7 | 340 | | 11.4 | 10.28 | 2 | 0.34 | 8.86 | 168.643 |
| 7 | 330 | | 11.4 | 10.28 | 2 | 0.24 | 6.66 | 166.286 |
| 7 | 320 | | 11.4 | 10.28 | 2 | 0.27 | 7.10 | 187.376 |
| 7 | 310 | | 11.4 | 10.28 | 2 | 0.30 | 6.92 | 238.727 |
| 7 | 300 | | 11.4 | 10.28 | 2 | 0.16 | 6.06 | 202.474 |
| 7 | 290 | | 10.5 | 9.71 | 2 | 0.08 | 6.23 | 120.043 |
| 7 | 280 | | 10.5 | 9.71 | 2 | 0.12 | 6.63 | 116.188 |
| 7 | 270 | | 10.5 | 9.71 | 4 | 0.12 | 6.36 | 146.323 |
| 7 | 260 | | 10.5 | 9.71 | 6 | 0.15 | 6.16 | 163.151 |
| 7 | 250 | | 10.3 | 9.57 | 7 | 0.13 | 7.56 | 139.679 |
| 7 | 240 | | 09.7 | 9.23 | 3 | 0.16 | 8.25 | 126.616 |

## Worcester, MA

September 26, 1992 (FSP 100 Only last three columns)

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 7 | 230 | | 09.7 | 9.23 | 3 | 0.17 | 7.51 | 145.394 |
| 7 | 220 | | 09.7 | 9.23 | 2 | 0.18 | 6.77 | 162.752 |
| 7 | 210 | | 09.7 | 9.23 | 2 | 0.17 | 7.10 | 141.139 |
| 7 | 200 | | 09.7 | 9.23 | 2 | 0.18 | 6.67 | 172.307 |
| 7 | 190 | | 09.7 | 9.23 | 3 | 0.19 | 6.49 | 183.475 |
| 7 | 180 | | 09.7 | 9.23 | 3 | 0.13 | 6.57 | 122.598 |
| 7 | 170 | | 09.7 | 9.23 | 3 | 0.18 | 5.80 | 213.554 |
| 7 | 160 | | 09.7 | 9.23 | 4 | 0.15 | 5.75 | 187.580 |
| 7 | 150 | | 09.7 | 9.23 | 4 | 0.17 | 5.61 | 232.986 |
| 7 | 140 | | 09.7 | 9.23 | 3 | 0.18 | 5.46 | 263.420 |
| 7 | 130 | | 09.7 | 9.23 | 3 | 0.16 | 5.45 | 238.816 |
| 7 | 120 | | 09.4 | 9.07 | 3 | 0.12 | 4.80 | 255.356 |
| 7 | 110 | | 09.4 | 9.07 | 3 | 0.14 | 4.48 | 330.161 |
| 7 | 100 | | 09.3 | 9.00 | 2 | 0.14 | 4.39 | 326.910 |
| 7 | 90 | | 09.2 | 8.92 | 3 | 0.14 | 4.38 | 338.592 |
| 7 | 80 | | 09.3 | 9.00 | 2 | 0.13 | 4.32 | 340.836 |
| 7 | 70 | | 08.9 | 8.77 | 2 | 0.13 | 4.34 | 348.338 |
| 7 | 60 | | 08.9 | 8.77 | 2 | 0.11 | 4.28 | 307.110 |
| 7 | 50 | | 08.9 | 8.77 | 3 | 0.05 | 3.94 | 221.883 |
| 7 | 40 | | 09.1 | 8.88 | 4 | 0.02 | 3.97 | 087.738 |
| 7 | 30 | | 08.9 | 8.77 | 3 | 0.02 | 3.39 | 134.182 |
| 7 | 20 | | 09.7 | 9.23 | 3 | 0.01 | 3.47 | 091.808 |
| 7 | 10 | | 09.6 | 9.20 | 14 | 0.00 | 8.35 | 004.617 |
| | 213851 | 214043 | | | | | | |
| 8 | 370 | | 11.4 | 10.28 | 2 | 0.22 | 10.11 | 183.383 |
| 8 | 360 | | 11.4 | 10.28 | 2 | 0.25 | 9.11 | 214.683 |
| 8 | 350 | | 11.4 | 10.28 | 3 | 0.20 | 8.53 | 225.121 |
| 8 | 340 | | 11.4 | 10.28 | 2 | 0.14 | 7.53 | 219.640 |
| 8 | 330 | | 11.4 | 10.28 | 3 | 0.14 | 11.34 | 140.560 |
| 8 | 320 | | 11.4 | 10.28 | 3 | 0.14 | 11.25 | 069.440 |
| 8 | 310 | | 11.4 | 10.28 | 3 | 0.11 | 9.87 | 074.645 |
| 8 | 300 | | 11.4 | 10.28 | 3 | 0.09 | 11.25 | 039.356 |
| 8 | 290 | | 11.4 | 10.28 | 3 | 0.09 | 10.52 | 042.044 |
| 8 | 280 | | 11.4 | 10.28 | 3 | 0.07 | 9.09 | 040.961 |
| 8 | 270 | | 11.4 | 10.28 | 3 | 0.05 | 8.04 | 060.157 |
| 8 | 260 | | 10.5 | 9.71 | 3 | 0.04 | 8.06 | 029.004 |
| 8 | 250 | | 10.9 | 9.99 | 4 | 0.06 | 8.60 | 040.337 |
| 8 | 240 | | 10.5 | 9.71 | 3 | 0.05 | 8.17 | 035.220 |
| 8 | 230 | | 10.5 | 9.71 | 3 | 0.09 | 8.38 | 076.271 |
| 8 | 220 | | 10.5 | 9.71 | 3 | 0.11 | 8.86 | 062.229 |
| 8 | 210 | | 10.5 | 9.71 | 3 | 0.12 | 8.37 | 076.793 |
| 8 | 200 | | 10.5 | 9.71 | 4 | 0.14 | 7.19 | 120.680 |
| 8 | 190 | | 10.5 | 9.71 | 2 | 0.19 | 7.47 | 128.680 |
| 8 | 180 | | 10.5 | 9.71 | 3 | 0.21 | 6.44 | 189.766 |

## Worcester, MA

September 26, 1992 (FSP 100 Only last three columns)

| Approach number | Altitude (m) *Begin time* | *End time* | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| 8 | 170 | | 10.0 | 9.39 | 3 | 0.18 | 6.14 | 186.497 |
| 8 | 160 | | 10.2 | 9.55 | 3 | 0.20 | 6.00 | 227.092 |
| 8 | 150 | | 09.7 | 9.23 | 3 | 0.19 | 6.21 | 194.708 |
| 8 | 140 | | 09.7 | 9.23 | 3 | 0.22 | 5.57 | 298.552 |
| 8 | 130 | | 09.7 | 9.23 | 3 | 0.20 | 5.43 | 300.978 |
| 8 | 120 | | 09.7 | 9.23 | 2 | 0.16 | 4.91 | 304.842 |
| 8 | 110 | | 09.7 | 9.23 | 3 | 0.14 | 4.59 | 308.302 |
| 8 | 100 | | 09.7 | 9.23 | 4 | 0.16 | 4.48 | 366.164 |
| 8 | 90 | | 09.7 | 9.23 | 3 | 0.15 | 4.42 | 361.466 |
| 8 | 80 | | 09.7 | 9.23 | 2 | 0.11 | 4.65 | 259.574 |
| 8 | 70 | | 09.7 | 9.23 | 4 | 0.10 | 4.31 | 308.219 |
| 8 | 60 | | 09.7 | 9.23 | 2 | 0.10 | 4.32 | 298.353 |
| 8 | 50 | | 09.3 | 9.00 | 2 | 0.09 | 4.01 | 346.858 |
| 8 | 40 | | 08.9 | 8.77 | 2 | 0.07 | 3.92 | 269.912 |
| 8 | 30 | | 08.9 | 8.77 | 2 | 0.05 | 4.44 | 168.346 |
| 8 | 20 | | 09.3 | 9.00 | 2 | 0.03 | 4.18 | 110.753 |
| 8 | 10 | | 09.6 | 9.19 | 12 | 0.01 | 7.92 | 019.691 |

## Huntington, WV

September 28, 1992

Number per cubic meter

Size: 3 microns Range: 2-47 microns

| Approach number | Altitude (m) / Begin time | Bin 1 / End time | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 114649 | 114713 | | | | | | | | | | | | | | |
| 1 | 100 | 1.23E+05 | 4.09E+04 | 4.09E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 90 | 1.23E+05 | 4.10E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 80 | 8.29E+04 | 2.06E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 70 | 8.19E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 60 | 1.23E+05 | 0 | 4.08E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 50 | 1.35E+05 | 2.69E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 40 | 4.41E+05 | 2.40E+05 | 1.60E+05 | 4.01E+04 | 8.02E+04 | 0 | 4.01E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 30 | 1.42E+07 | 2.09E+07 | 7.12E+06 | 2.76E+06 | 1.86E+06 | 3.21E+05 | 3.21E+05 | 1.92E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 20 | 1.82E+07 | 2.66E+07 | 1.76E+07 | 6.33E+06 | 1.71E+06 | 6.03E+05 | 2.04E+05 | 1.04E+05 | 8.59E+04 | 1.71E+04 | 0 | 0 | 0 | 0 | 0 |
| 1 | 10 | 2.30E+07 | 3.48E+07 | 2.97E+07 | 1.20E+07 | 3.79E+06 | 1.18E+06 | 3.71E+05 | 3.23E+05 | 1.42E+05 | 7.02E+04 | 2.39E+04 | 0 | 0 | 0 | 0 |
| | 115442 | 115458 | | | | | | | | | | | | | | |
| 2 | 70 | 1.58E+05 | 1.58E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 60 | 1.21E+06 | 1.07E+06 | 1.55E+06 | 1.36E+06 | 9.63E+05 | 5.23E+05 | 2.41E+05 | 9.26E+04 | 7.45E+04 | 3.09E+04 | 1.54E+04 | 0 | 1.54E+04 | 1.54E+04 | 0 |
| 2 | 50 | 7.97E+06 | 1.18E+07 | 1.29E+07 | 1.69E+07 | 1.48E+07 | 8.77E+06 | 3.75E+06 | 1.93E+06 | 4.98E+05 | 3.31E+05 | 2.42E+04 | 4.69E+04 | 0 | 0 | 0 |
| 2 | 40 | 2.31E+07 | 3.68E+07 | 4.46E+07 | 4.37E+07 | 1.34E+07 | 4.27E+06 | 7.73E+05 | 2.95E+05 | 1.47E+05 | 1.11E+05 | 0 | 0 | 0 | 3.71E+04 | 0 |
| 2 | 30 | 3.32E+07 | 5.09E+07 | 5.04E+07 | 1.84E+07 | 3.19E+06 | 5.96E+05 | 1.01E+05 | 1.50E+05 | 1.51E+05 | 1.23E+05 | 5.00E+04 | 2.46E+04 | 0 | 0 | 0 |
| 2 | 20 | 2.98E+07 | 5.07E+07 | 4.64E+07 | 7.91E+06 | 7.61E+05 | 2.48E+05 | 1.52E+05 | 7.62E+04 | 1.52E+05 | 0 | 0 | 0 | 1.87E+04 | 0 | 0 |
| | 120328 | 120347 | | | | | | | | | | | | | | |
| 3 | 90 | 8.26E+04 | 8.26E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 80 | 8.28E+04 | 5.52E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 70 | 1.65E+05 | 8.28E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 60 | 4.09E+04 | 0 | 4.12E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 50 | 2.68E+04 | 1.08E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 40 | 1.53E+07 | 1.44E+07 | 6.84E+06 | 4.69E+06 | 2.12E+06 | 8.13E+05 | 3.03E+05 | 1.65E+05 | 1.37E+04 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 121346 | 121406 | | | | | | | | | | | | | | |
| 4 | 90 | 1.13E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 80 | 5.60E+04 | 2.81E+04 | 2.80E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 70 | 1.23E+05 | 6.01E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 60 | 1.99E+04 | 1.03E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 50 | 2.88E+05 | 1.65E+05 | 3.17E+04 | 6750 | 1.85E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 123510 | 123538 | | | | | | | | | | | | | | |
| 5 | 160 | 1.61E+05 | 8.05E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 150 | 2.00E+05 | 8.01E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 140 | 2.69E+04 | 1.60E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 130 | 8.15E+04 | 5.43E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 120 | 1.64E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 110 | 8.16E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 100 | 1.21E+05 | 4.05E+04 | 4.03E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 90 | 1.99E+05 | 1.19E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 80 | 2.35E+05 | 7.82E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 70 | 2.49E+06 | 4.08E+06 | 2.86E+06 | 2.75E+06 | 1.44E+06 | 8.29E+05 | 4.84E+05 | 2.40E+05 | 1.31E+05 | 6.54E+04 | 0 | 2.18E+04 | 0 | 0 | 0 |
| 5 | 60 | 2.64E+07 | 5.38E+07 | 4.62E+07 | 3.35E+07 | 1.58E+07 | 6.51E+06 | 1.83E+06 | 6.71E+05 | 3.30E+05 | 1.65E+05 | 5.89E+04 | 2.38E+04 | 1.17E+04 | 1.17E+04 | 1.17E+04 |
| | 124636 | 124658 | | | | | | | | | | | | | | |
| 6 | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 120 | 8.18E+04 | 4.09E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 100 | 4.09E+04 | 4.08E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 90 | 1.22E+05 | 4.05E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 80 | 3.22E+05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 70 | 4.03E+04 | 4.03E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 60 | 3.24E+07 | 6.44E+07 | 5.67E+07 | 3.14E+07 | 1.65E+07 | 9.15E+06 | 3.33E+06 | 1.30E+06 | 6.02E+05 | 3.52E+05 | 1.42E+05 | 5.33E+04 | 3.60E+04 | 0 | 1.72E+04 |

# Huntington WV

September 28, 1992

Number per cubic meter

Size: 300 microns Range: 150 - 4650 microns

| Approach number | Altitude (m) | Bin 1 | Bin 2 | Bin 3 | Bin 4 | Bin 5 | Bin 6 | Bin 7 | Bin 8 | Bin 9 | Bin 10 | Bin 11 | Bin 12 | Bin 13 | Bin 14 | Bin 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Begin time* | *End time* | | | | | | | | | | | | | | |
| | 114649 | 114713 | | | | | | | | | | | | | | |
| 1 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 20 | 3.107 | 3.715 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 115442 | 115458 | | | | | | | | | | | | | | |
| 2 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 40 | 13.34 | 3.987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 30 | 31.45 | 8.05 | 0 | 2.966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 20 | 46.08 | 8.077 | 0 | 0 | 2.284 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 120328 | 120347 | | | | | | | | | | | | | | |
| 3 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 121346 | 121406 | | | | | | | | | | | | | | |
| 4 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 123510 | 123538 | | | | | | | | | | | | | | |
| 5 | 160 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 150 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 140 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 124636 | 124658 | | | | | | | | | | | | | | |
| 6 | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Huntington, WV

September 28, 1992 (FSSP-100 Only, last three columns)

| Approach number | Altitude (m) Begin time | End time | Temp (C) | Vapor density (g/m3) | Number seconds in layer | Liquid water content (g/m3) | Median vol. radius (m-6) | Total number (per cm3) |
|---|---|---|---|---|---|---|---|---|
| | 114649 | 114713 | | | | | | |
| 1 | 100 | | 12.2 | 10.8 | 2 | 0.00 | 3.65 | 000.205 |
| 1 | 90 | | 12.2 | 10.8 | 2 | 0.00 | 2.15 | 000.164 |
| 1 | 80 | | 12.2 | 10.8 | 4 | 0.00 | 2.03 | 000.104 |
| 1 | 70 | | 12.2 | 10.8 | 2 | 0.00 | 1.75 | 000.082 |
| 1 | 60 | | 12.2 | 10.8 | 2 | 0.00 | 3.89 | 000.163 |
| 1 | 50 | | 12.2 | 10.8 | 3 | 0.00 | 1.91 | 000.162 |
| 1 | 40 | | 12.2 | 10.8 | 2 | 0.00 | 7.25 | 001.002 |
| 1 | 30 | | 12.2 | 10.8 | 1 | 0.02 | 5.85 | 047.698 |
| 1 | 20 | | 11.4 | 10.3 | 4 | 0.03 | 5.06 | 071.454 |
| 1 | 10 | | 11.4 | 10.3 | 3 | 0.05 | 5.50 | 105.338 |
| | 115442 | 115458 | | | | | | |
| 2 | 70 | | 13.9 | 12.0 | 1 | 0.00 | 2.38 | 000.316 |
| 2 | 60 | | 13.9 | 12.0 | 4 | 0.01 | 8.72 | 007.158 |
| 2 | 50 | | 13.9 | 12.0 | 3 | 0.13 | 8.31 | 079.709 |
| 2 | 40 | | 13.0 | 11.4 | 2 | 0.12 | 5.93 | 167.118 |
| 2 | 30 | | 13.0 | 11.4 | 3 | 0.06 | 4.87 | 157.221 |
| 2 | 20 | | 12.6 | 11.1 | 4 | 0.04 | 4.22 | 136.165 |
| | 120328 | 120347 | | | | | | |
| 3 | 90 | | 12.2 | 10.8 | 4 | 0.00 | 2.38 | 000.165 |
| 3 | 80 | | 12.2 | 10.8 | 3 | 0.00 | 2.32 | 000.138 |
| 3 | 70 | | 12.2 | 10.8 | 2 | 0.00 | 2.27 | 000.248 |
| 3 | 60 | | 12.2 | 10.8 | 2 | 0.00 | 3.96 | 000.082 |
| 3 | 50 | | 12.2 | 10.8 | 3 | 0.00 | 2.47 | 000.134 |
| 3 | 40 | | 11.4 | 10.3 | 5 | 0.02 | 6.18 | 044.704 |
| | 121346 | 121406 | | | | | | |
| 4 | 90 | | 12.2 | 10.8 | 3 | 0.00 | 1.75 | 000.113 |
| 4 | 80 | | 12.2 | 10.8 | 3 | 0.00 | 3.68 | 000.112 |
| 4 | 70 | | 12.0 | 10.7 | 4 | 0.00 | 2.26 | 000.183 |
| 4 | 60 | | 11.8 | 10.5 | 4 | 0.00 | 2.48 | 000.123 |
| 4 | 50 | | 12.0 | 10.7 | 7 | 0.00 | 4.67 | 000.510 |
| | 123510 | 123538 | | | | | | |
| 5 | 160 | | 12.2 | 10.8 | 2 | 0.00 | 2.27 | 000.242 |
| 5 | 150 | | 12.2 | 10.8 | 2 | 0.00 | 2.21 | 000.280 |
| 5 | 140 | | 12.2 | 10.8 | 3 | 0.00 | 2.48 | 000.187 |
| 5 | 130 | | 12.2 | 10.8 | 3 | 0.00 | 2.32 | 000.136 |
| 5 | 120 | | 12.2 | 10.8 | 3 | 0.00 | 1.75 | 000.164 |
| 5 | 110 | | 12.2 | 10.8 | 2 | 0.00 | 1.75 | 000.082 |
| 5 | 100 | | 12.2 | 10.8 | 2 | 0.00 | 3.65 | 000.202 |
| 5 | 90 | | 12.2 | 10.8 | 2 | 0.00 | 2.30 | 000.318 |
| 5 | 80 | | 12.2 | 10.8 | 1 | 0.00 | 2.15 | 000.313 |
| 5 | 70 | | 12.2 | 10.8 | 3 | 0.02 | 8.44 | 015.389 |
| 5 | 60 | | 12.2 | 10.8 | 6 | 0.14 | 6.57 | 185.330 |
| | 124636 | 124658 | | | | | | |
| 6 | 130 | | 12.2 | 10.8 | 1 | 0.00 | 0.00 | 000.000 |
| 6 | 120 | | 12.2 | 10.8 | 2 | 0.00 | 2.27 | 000.123 |
| 6 | 110 | | 12.2 | 10.8 | 1 | 0.00 | 0.00 | 000.000 |
| 6 | 100 | | 12.2 | 10.8 | 2 | 0.00 | 2.38 | 000.082 |
| 6 | 90 | | 12.2 | 10.8 | 2 | 0.00 | 2.15 | 000.163 |
| 6 | 80 | | 12.2 | 10.8 | 1 | 0.00 | 1.75 | 000.322 |
| 6 | 70 | | 12.2 | 10.8 | 2 | 0.00 | 2.38 | 000.081 |
| 6 | 60 | | 12.2 | 10.8 | 4 | 0.18 | 7.19 | 216.365 |

# REPORT DOCUMENTATION PAGE

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| | April 1994 | Contractor Report |

**4. TITLE AND SUBTITLE**
Drop Size Distributions and Related Properties of Fog for Five Locations Measured from Aircraft

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Task 10 Subtask
WU 505-64-13-67

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**13. ABSTRACT** (*Maximum 200 words*)

Fog drop size distributions were collected from aircraft as part of the Synthetic Vision Technology Demonstration Program. Three West Coast marine advection fogs, one frontal fog, and a radiation fog were sampled from the top of the cloud to the bottom as the aircraft descended on a 3-degree glideslope. Drop size versus altitude versus concentration are shown in 3-dimensional plots for each 10-meter altitude interval from 1-minute samples. Also shown are median volume radius and liquid water content. Advection fogs contained the largest drops with median volume radius of 5-8 micrometers, although the drop sizes in the radiation fog were also large just above the runway surface. Liquid water content increased with height, and the total number of drops generally increased with time. Multimodal variations in number density and particle size were noted in most samples where there was a peak concentration of small drops (2-5 micrometers) at low altitudes, mid-altitude peak of drops 5-11 micrometers, and high-altitude peak of the larger drops (11-15 micrometers and above). These observations are compared with others and corroborate previous results in fog gross properties, although there is considerable variation with time and altitude even in the same type of fog.

**14. SUBJECT TERMS**
Fog, drop size distributions, altitude and time variation of fog parameters

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