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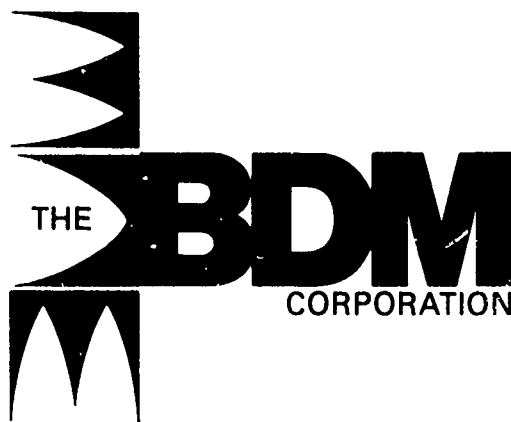
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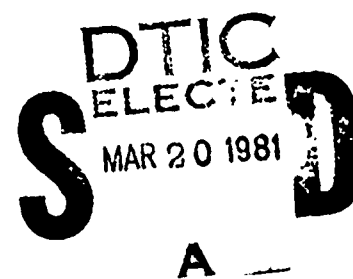
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"AEROSOL EXTINCTION OVER THE OCEAN:
A FIELD EVALUATION OF THE
WELLS - MUNN - KATZ MODEL"

by
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Project Engineer

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FOREWORD

This report was prepared under Work Order No. 086432 of Contract No. N00014-78-204 in support of the U.S. Naval Postgraduate School research project supported by the Naval Air Systems Command (AIR 370) and the Naval Material Command (EO/MET). The data were obtained by the Environmental Physics Group at NPS under the direction of Professors K. L. Davidson and G. E. Schacher.

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ABSTRACT

Aerosol and Meteorological data from cruises in the East Pacific (CEWCOM-78) and the North Atlantic (JASIN) were used to evaluate the predictive performance of the Wells-Munn-Katz aerosol model. Under given meteorological conditions (wind speed and relative humidity), the model gave very good predictions of the average aerosol extinction coefficient at 10.6 μ m wavelength (the standard deviation was about a factor of three). The model did not perform well when asked to predict specific aerosol extinction values. The model continental coefficient, $B = 1.7$, was found to be too large; the average open ocean value should be $B = 0.24$. The continental coefficient was found to be important for predicting IR band extinction from visible band extinction estimates. Further analysis demonstrated that much of the variance of continental aerosol spectral density was due to air-mass history and that much of the variance of sea salt aerosol spectral density was due to changes in the marine layer mixing height.

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A. INTRODUCTION

Aerosol size spectrum data from two oceanic field experiments have been used to evaluate the Wells-Munn-Katz (WMK) marine aerosol Model B (Noonkester, 1980). The field experiments were the Cooperative Experiment for West Coast Oceanography and Meteorology (CEWCOM-78) off the California coast in May, 1978 and the Joint Air-Sea Interaction (JASIN) experiment between Scotland and Iceland in August and September, 1979 (see Figure 1). The purpose of this report is to evaluate the accuracy of WMK predictions of aerosol extinction coefficient, α , and to produce modifications, if possible, that improve the model.

B. MEASUREMENTS

1. Aerosols

The aerosol size spectra were compiled using Particle Measurements Systems, Inc., (PMS) optical spectrometers. The smaller sizes (0.075 to 1.5 μm radius) were counted with a PMS model ASAS-100 (active scattering) probe; the larger sizes (0.2 to 14 μm radius) were counted with a PMS Model CSAS-300 HV (classical scattering) probe. The spectrometer probes were controlled by a PMS Model DAS-32 data acquisition system with the data recorded on digital magnetic tape. Further details on the aerosol system can be found in Schacher et al (1980).

2. Meteorology

The meteorological parameters of direct relevance to the WMK model are relative humidity (H) and true wind speed (u). In addition, we obtained measurements of air temperature (T), sea surface temperature (T_s), relative wind speed (U_r) and direction (ϕ), ship speed (U_s), and mixed layer height (h). A complete description of the equipment is given in Houlihan et al (1978). A summary is provided in Table I. Note that CEWCOM-78 had more accurate T and H measurement, and two complete levels of meteorological instrumentation. The ship's speed (U_s) was taken from

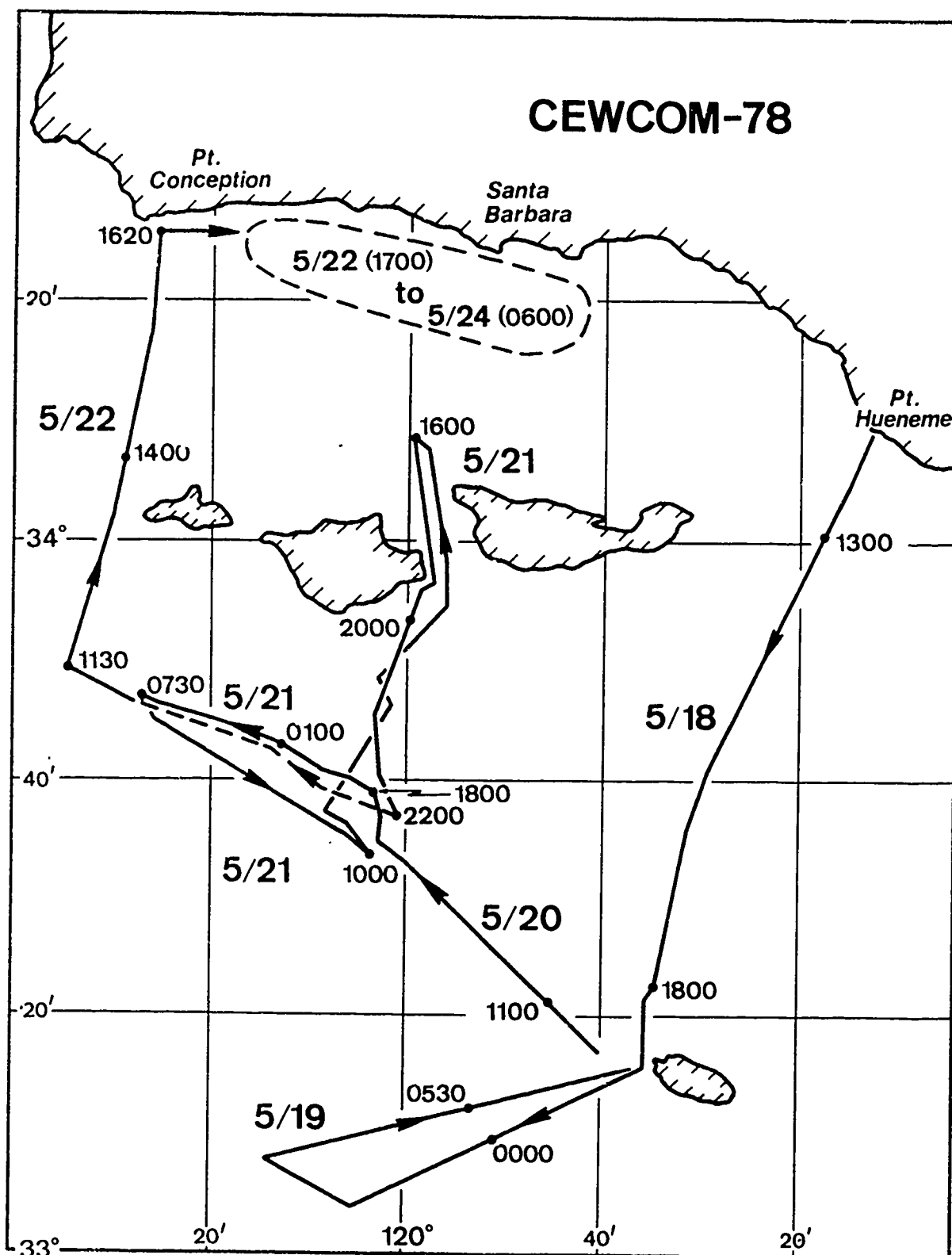


Figure 1a. Location of CEWCOM-78 Experiment.

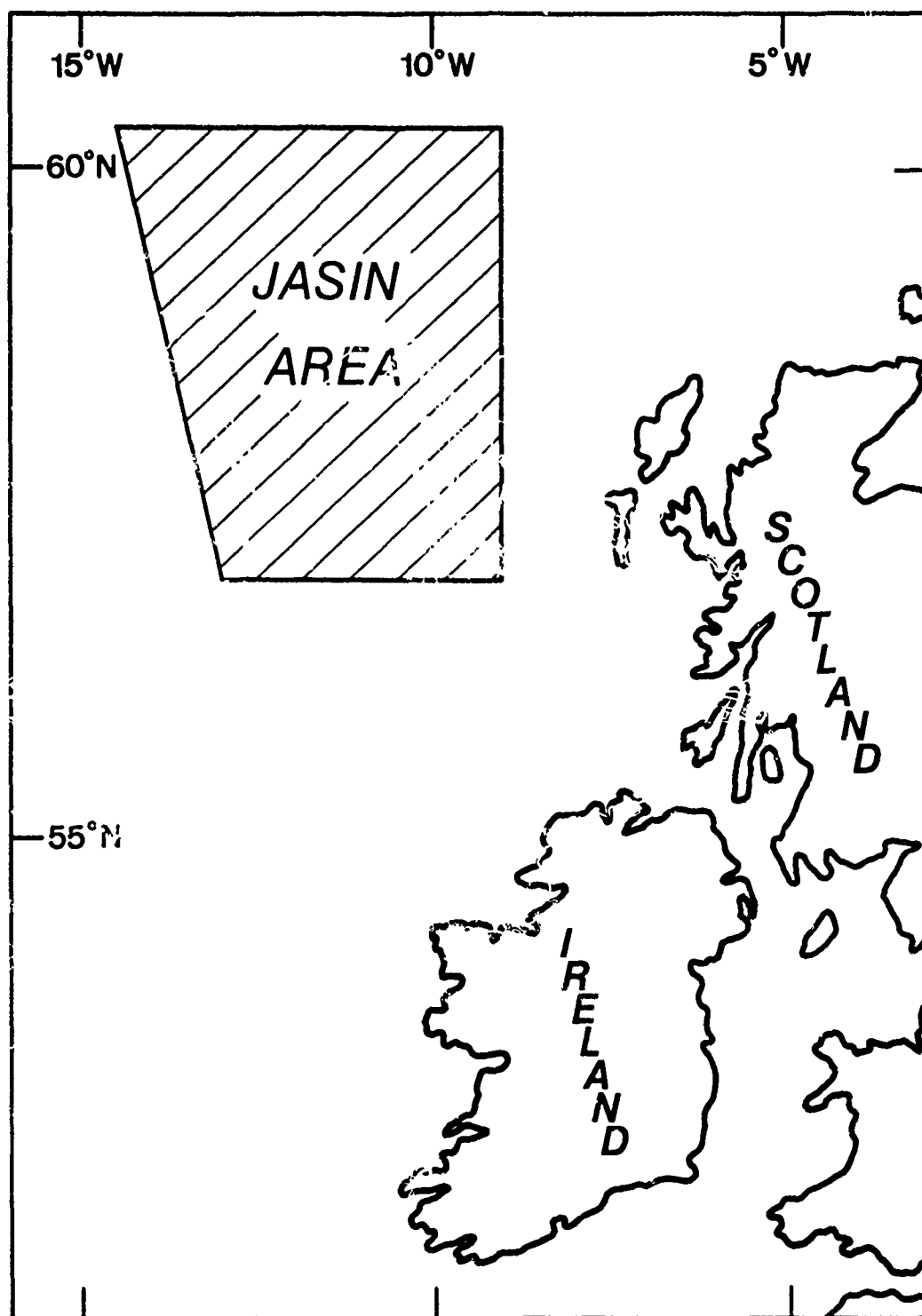


Figure 1b. Location of JASIN Experiment.

TABLE I. Summary of meteorological instrumentation.
The numbers below the instrument description
are estimates of the measurement accuracy
of the corresponding meteorological parameter.

Experiment	U_r	H	T	T_s	h	Level Height Met.	Aerosol
CEWCOM-78	Cup	LiCl	Quartz	Quartz	Acoustic	7,20 m	10 m
	0.5 m/s	3%	0.2°C	0.5°C	30 m	-	-
JASIN	Cup	LiCl	Therm.	Therm.	None	14 m	14 m
	0.5 m/s	5%	0.5°C	0.5°C			

a shipboard instrument during JASIN but was simply "eyeball" estimated by the captain for CEWCOM-78. Thus, the true wind data are more accurate for JASIN.

C. ANALYSIS

1. Aerosol Spectra

The basic aerosol data is obtained as $N(r) = dN/dr$ in 90 size channels (6 ranges of 15 channels each) from 0.075 to 14 μm radius. The $N(r)$ spectrum is calculated for successive 20 minute averaging periods. The first few size bins of each range are thrown out because they are influenced by noise and bias errors in the photodetector. Other bins in the 0.5 to 2 μm radius area are thrown out because they fall in the "ambiguity zones" associated with non-single valued nature of the light scattering at the 0.63 μm laser wavelength of the spectrometers.

The $N(r)$ spectrum is fit in LGT ($N(r)$), LGT(r) space with a seventh order polynomial for $0.1 < r < 7 \mu m$ and a first order polynomial (linear) for $r > 7 \mu m$. The linear fit (in log-log space) is used for the larger sizes to avoid the instabilities associated with extrapolating high order polynomials beyond regions of poor statistics. The extinction is calculated using

$$\alpha = \int_{0.03}^{30} \pi r^2 N(r) E(\eta, \lambda) dr \quad (1)$$

where $E(\eta, \lambda)$ is the Mie scattering efficiency at wavelength λ and refractive index n . This entire process is described in great detail in Schacher et al (1980).

2. Model Calculations

We have used the WMK model B as given by Noonkester (1980). Since several WMK models are available, we will provide exact details here. The size spectrum is given by

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$$N(r) = B(r/a)^{-4} + 1.62(C_1 + C_2 V^\delta) \left(e^{\frac{-Z}{h_0 F}} - 8.5(r/a)^\Gamma \right) \frac{r}{Fa} \quad (2)$$

where r = radius,

$$v = 0.5 \text{ for } u \leq 4 \text{ m/s}$$

$$v = u - 3.5 \text{ for } u > 4 \text{ m/s}$$

$$F = 1 + (V/60)^3$$

$$\Gamma = 0.384 - 0.00293 v^{1.25}$$

Z = height above sea surface, m

h_0 = scale height, m (800m for $Z < 1000$ m)

$$B = 1.7$$

$$a = 0.81 \exp 0.066S/(1.058 - S)$$

$$S = H/100$$

The other constants are given below

$v, \text{ m/s}$	C_1	C_2	δ
$v \leq 7$	350	1000	1.15
$v \geq 7$	0	6900	0.29

We have used the model in this form for the extinction calculating although it is theoretically wrong by a factor a^{-1} (see Wells et al, 1977, and Hughes, 1980). The first item in Eq. 2 is the continental aerosol component and has an r^{-4} dependence generally referred to as a "Junge" distribution. The second term, which is wind speed dependent, is the locally generated sea salt component.

3. Volume Representation

Since the size dependence of aerosol spectral density, $N(r)$, is typically on the order of r^{-3} , the volume spectrum is often more convenient to deal with.

$$V(r) = \frac{dV}{dr} = \frac{4}{3} \pi r^3 N(r) \quad (3)$$

Thus, we can partition the marine aerosol volume distribution into continental (V_c) and sea salt (V_s) components

$$V(r) = V_c(r) + V_s(r) \quad (4)$$

where we assume

$$V_c(r) = A' a^3/r = A/r \quad (5)$$

The quantity $A' = A/a^3 = \frac{4\pi}{3} B$ is called the normalized Junge coefficient (A is the unnormalized Junge coefficient).

4. Editing

There are 950 JASIN and 450 CEWCOM-78 aerosol spectra (20 minute averages). The criteria used to exclude data from the analysis are listed below

- 1) Relative wind direction not within 30° of aerosol probe intake axes.
- 2) Humidity and true wind speed data unavailable.
- 3) Fog events ($\alpha > 1 \text{ km}^{-1}$)
- 4) Continental influence: Certain time periods in CEWCOM-78 were heavily contaminated with continental aerosols due to proximity to land or off shore wind conditions.

5) Insufficient wind speed data over previous twelve hours: The true wind speed used in most of the WMK comparisons was an average of over the previous twelve hours. Previous investigations (Katz, 1980) have shown that the long time periods required for the aerosols to reach equilibrium with the local surface generation precludes the use of a simple 20 minute average wind speed. We excluded data if there was more than a three hour gap in the wind speed record over the previous twelve hours. This eliminated about 30% of the JASIN data and about 90% of the CEWCOM-78 data.

D. RESULTS

The results presented here will tend to emphasize the JASIN data. Because CEWCOM-78 was so close to the continent, the variations in background (continental) aerosols was considerable. This problem was accentuated by a cruise plan that brought the ship into the Los Angeles basin on several occasions. The periodic downwind cruise track of the ACANIA greatly reduced the amount of data available for the 12 hour wind speed averages.

One further note on terminology is in order. For the sake of simplicity, aerosol extinction coefficients calculated from the aerosol spectral density data (Section C-1) shall be referred to as the "measured" extinction. Those who feel that this is unbearably arrogant are referred to a recent report (Fairall et al, 1980) which documents the excellent correlation of optical measurements of extinction with NPS aerosol spectrum extinction calculations.

1. Model Extinction Comparison

The basic measurements of extinction at three relevant wavelengths are presented in Figure 2 to illustrate the strong wind speed dependence. In Figure 3 the data are compared with the WMK predictions for $\lambda = 10.6 \mu\text{m}$ at RH = 87%. Because of the scarcity of CEWCOM-78 data, we also included the 20 minute wind speed average results. The JASIN data 12 hour averages were a much better fit to the WMK curve than the 20 minute averages and, in fact, were very similar to the CEWCOM-78 results. The ratio of the visible extinction to the IR extinction (a useful parameter because it is essentially independent of relative humidity) is shown in Figure 4 for 10.6 and $3.75 \mu\text{m}$ wavelengths.

This comparison (Figure 3) asks "given a wind speed and relative humidity, how well does the model predict the observed extinction"? Clearly, the WMK model predicts very well on the average with rather large standard deviation (about half an order of magnitude, or a factor of 3). A considerably more stringent comparison asks "given and observed extinction, how well does the model predict this extinction"? This

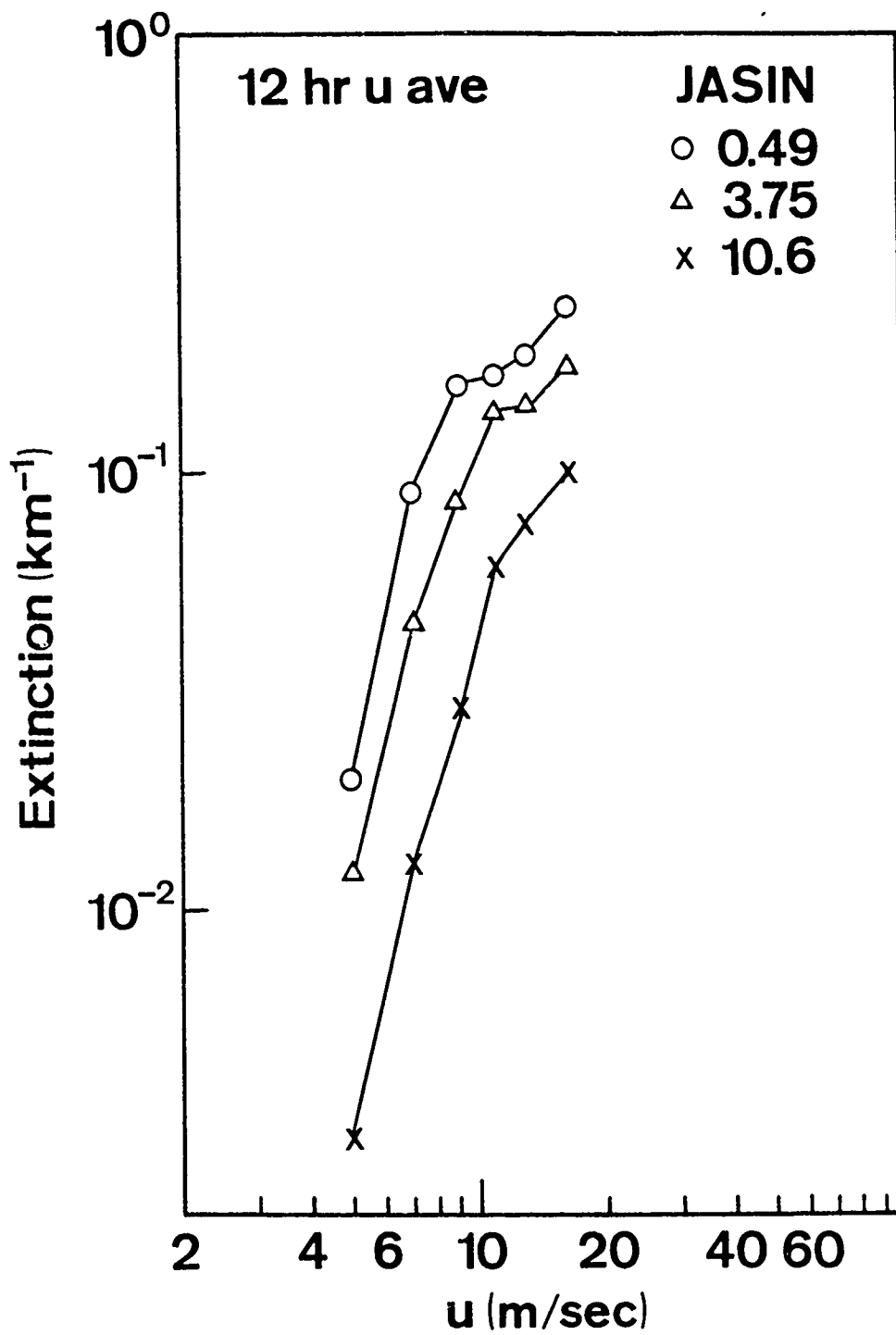


Figure 2. Measured Aerosol Extinction Coefficient, α , Versus 12 Hour Average Wind Speed, u , for JASIN.

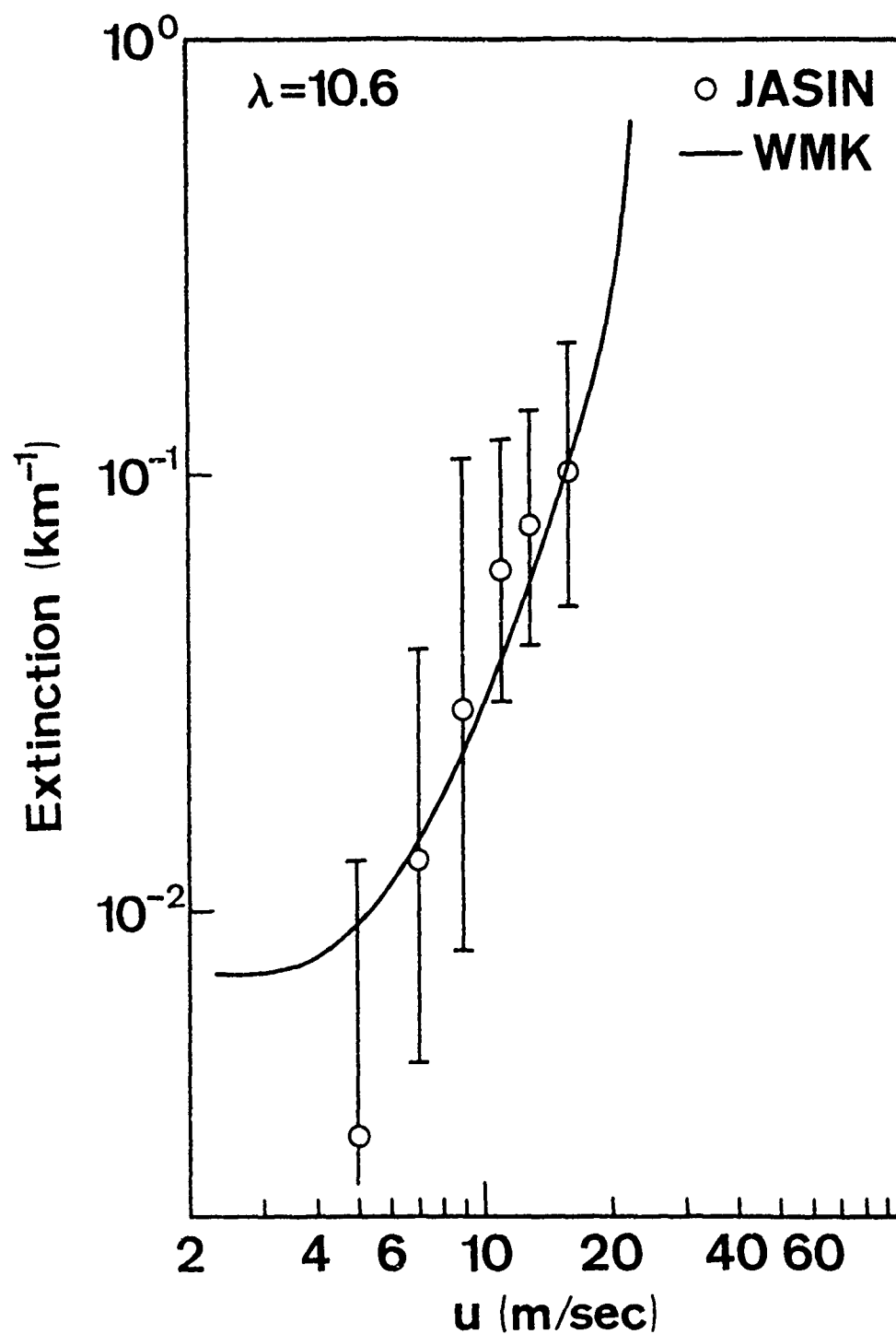


Figure 3a. Measured Extinction Coefficient (Circles) and WMK Model Predictions at $\lambda = 10.6\mu\text{m}$ and $\text{RH} = 87\%$ Versus Wind Speed. JASIN (12 Hour Average u).

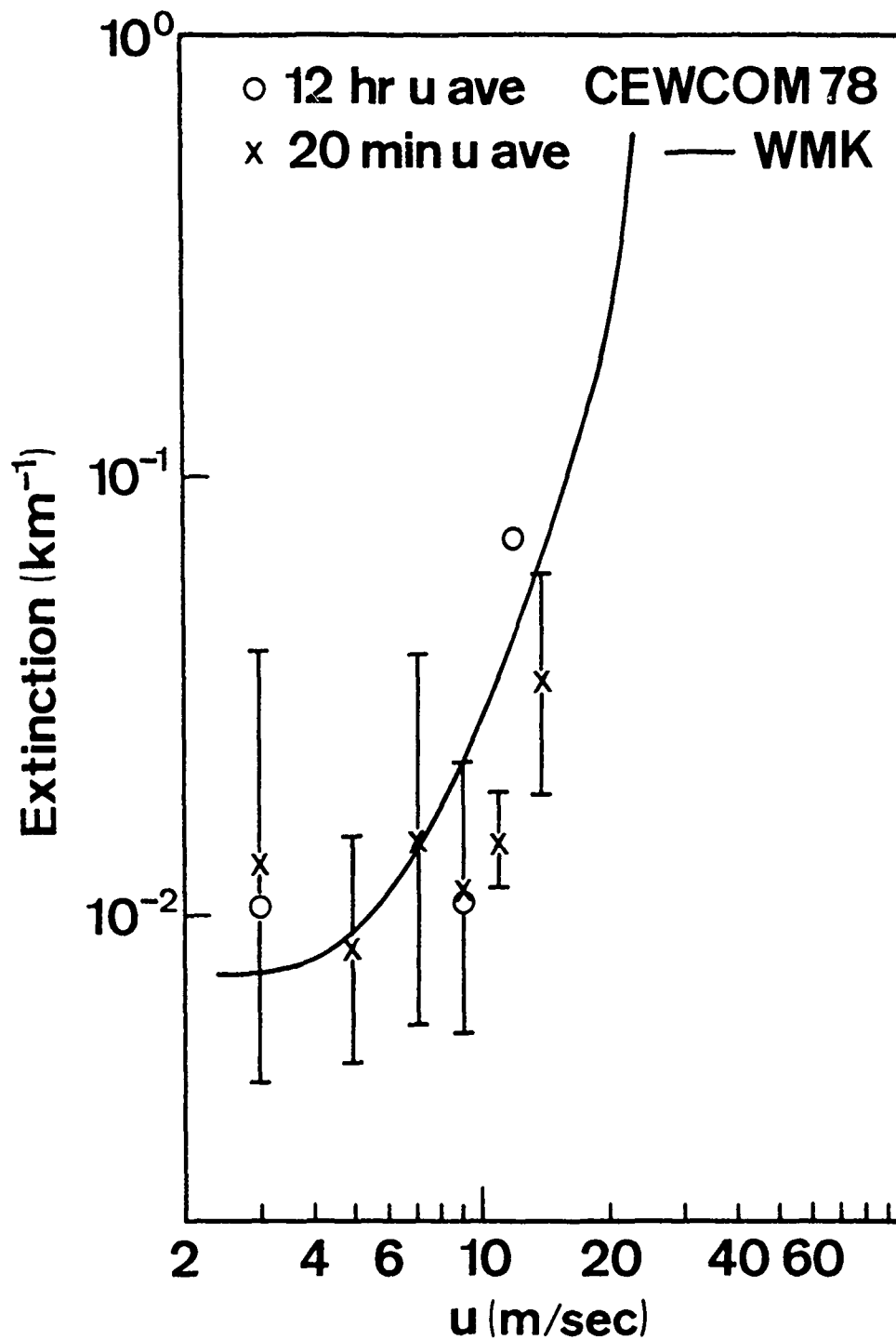


Figure 3b. Measured Extinction Coefficient (Circles) and WMK Model Predictions at $\lambda = 10.6\mu\text{m}$ and $\text{RH} = 87\%$ Versus Wind Speed. CEWCOM-78 (Circles - 12 Hour Average u , X's - 20 Minute Average u).

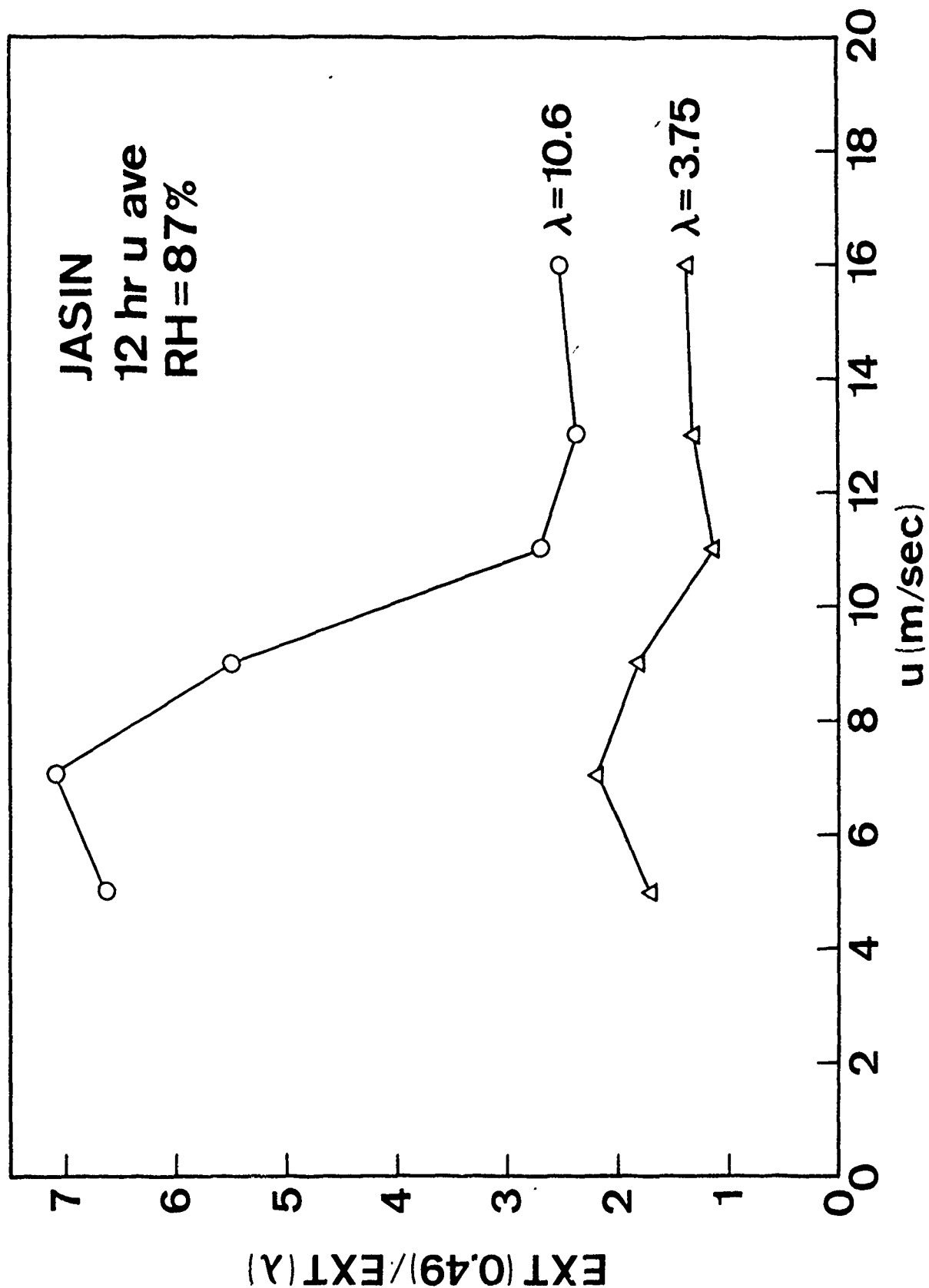


Figure 4. Ratio of Measured Aerosol Extinction Coefficient at $\lambda = 0.49\mu\text{m}$ to those Measured at $\lambda = 3.75\mu\text{m}$ and $\lambda = 10.6\mu\text{m}$ Versus Wind Speed.

comparison (Figure 5) is considerably less favorable, particularly in the extremes of very clear and very unclear conditions. A certain amount of disagreement of this type is expected when comparing quantities that are subject to experimental error. However, we show in Figure 6 that a considerable part of the discrepancy is due to over estimation of the continental aerosol component (WMK assume $B = 1.7$ or $A' = 7.1$). Furthermore, the high visibility conditions are characterized by much smaller continental aerosol densities ($A' = 0.2$) while the low visibility conditions have typically greater continental aerosol densities ($A' = 1.7$). The disagreement at high extinction values is due to the inaccuracy of the relative humidity measurement which is critical under near fog and heavy haze conditions where $RH \approx 100\%$.

2. Model Aerosol Spectrum Comparison

Since the extinction results of the previous section revealed some problems with the WMK model, we decided to use the aerosol spectrum volume density, $V(r)$, to examine the model more fundamentally. The total conglomerate volume spectra for JASIN are shown for different 12 hour wind speed categories in Fig. 7. This graph clearly indicates that $V(r)$ is virtually independent of wind speed at $r = 0.1\mu m$. We conclude that surface generated sea salt aerosols are insignificant at $r = 0.1\mu m$ and that these particles are of non-local (continental background) origin. Therefore, by keying on the $V(r)$ spectrum for $r < 0.3\mu m$, we can simply calculate the continental coefficient from the observed spectrum using Eq. 5 ($A = rV(r)$). This method was used to obtain the values of A' given in Fig. 6. Further proof that this gives a realistic index of continental influence is given in Fig 8 where A' (recall that A' is A corrected for relative humidity) is compared to atmospheric radon activity for CEWCOM-78 (Larson et al, 1979).

A typical value of A' was 1.0 for JASIN with a range from .1 to 5. For CEWCOM-78 (excluding several periods directly off the coast), A' was typically 2.0 with a range from 1 to 10. If we simply change the continental coefficient from $A' = 7.1$ ($B = 1.7$) to $A' = 1$ ($B = 0.24$), the WMK model predictions are improved in the clearer conditions: (X's in

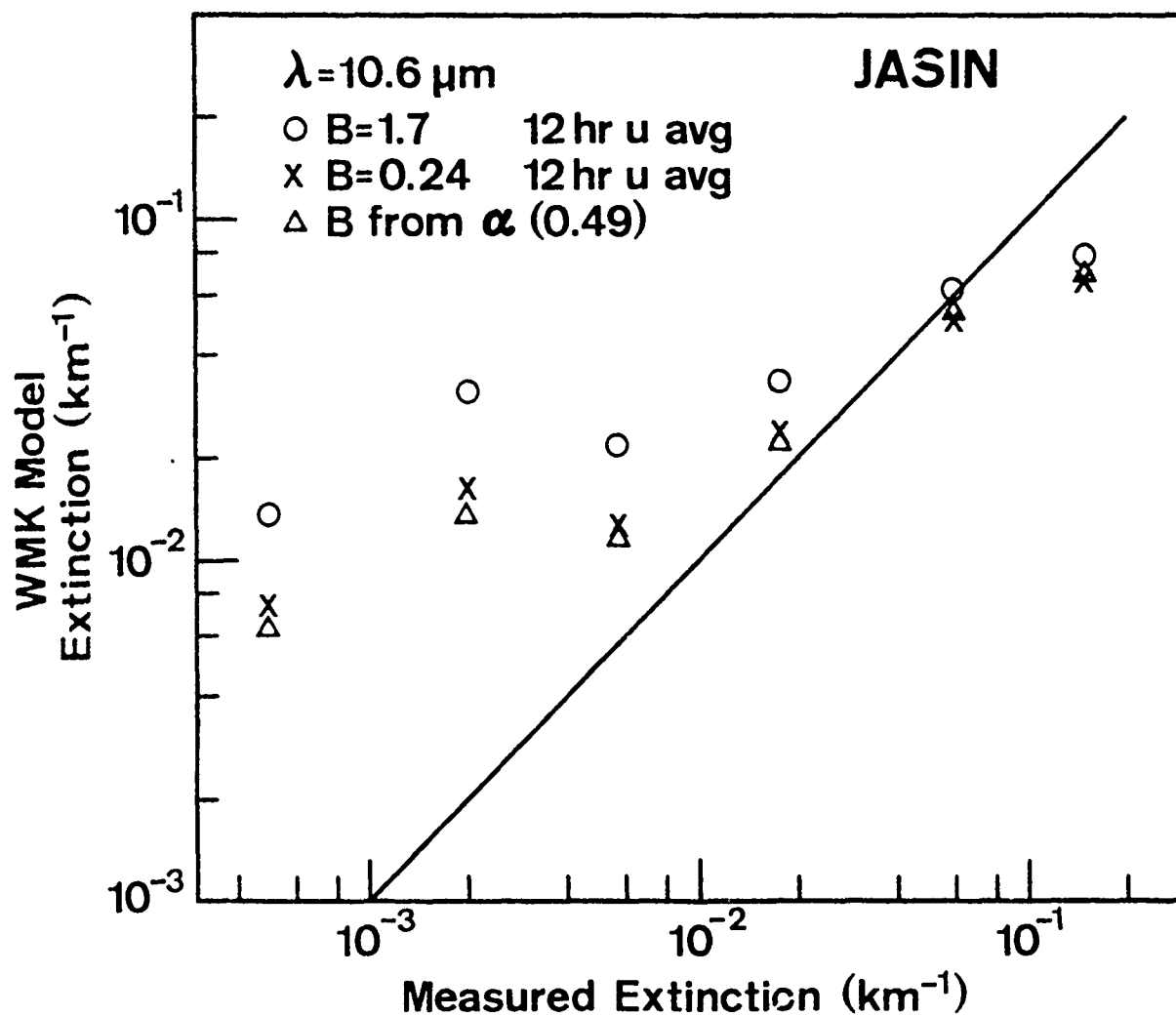


Figure 5. WMK Model Predictions of $\lambda = 10.6 \mu\text{m}$ Aerosol Extinction as a Function of Extinction Actually Observed (circles - $B = 1.7$, X's - $B = 0.24$, triangles - B taken from Fig. 6).

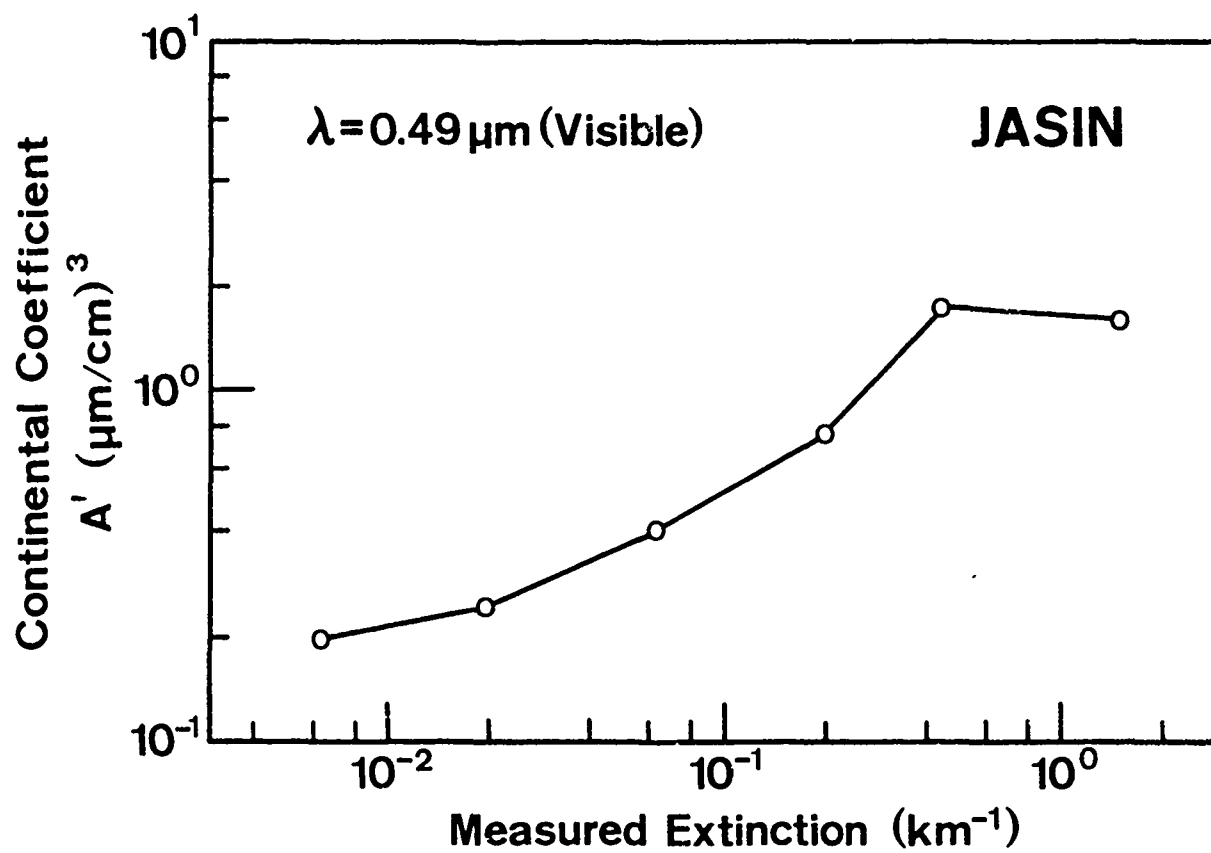


Figure 6. Continental Aerosol Coefficient $A' = \frac{4}{3} \pi B$ versus Measured Extinction in the visible ($\lambda = 0.49 \mu\text{m}$).

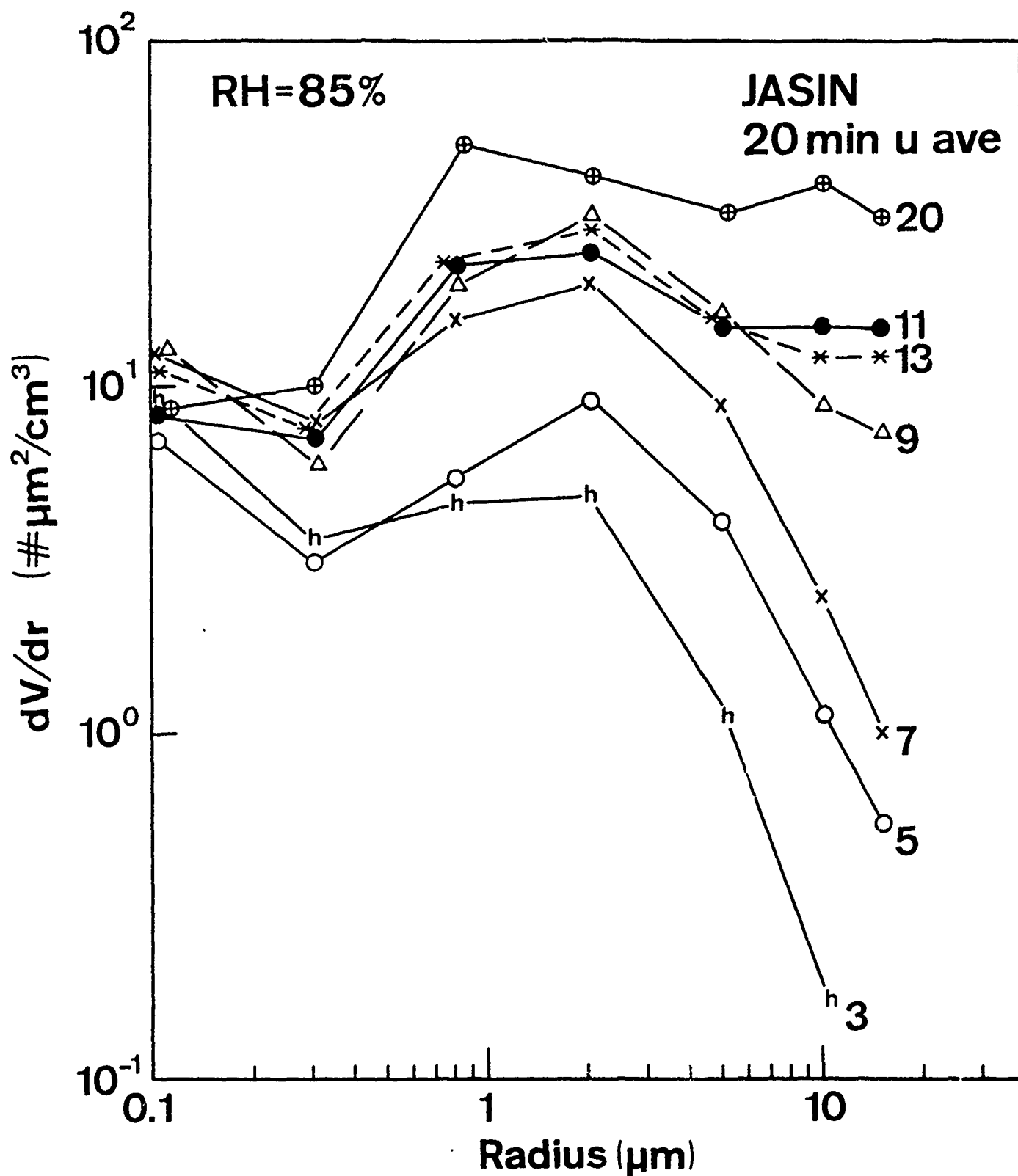


Figure 7. Ensemble Average Aerosol Volume Spectra, $V(r)$, Versus Particle Radius at Various Wind Speeds. The Particles at $r = 0.1\mu\text{m}$ are Primarily of Continental Origin.

CEWCOM-78

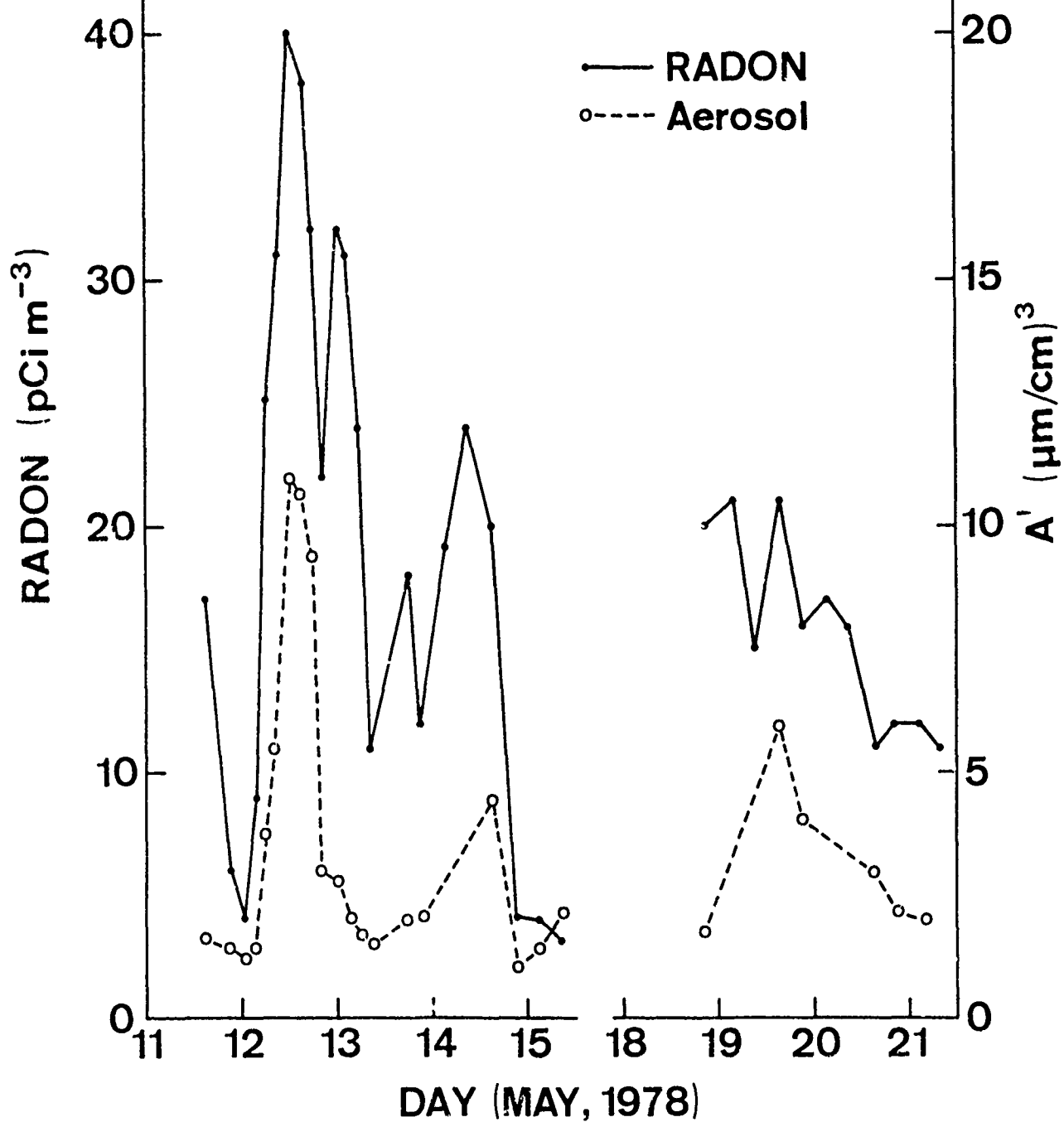


Figure 8. Atmospheric Radon Activity (Solid Line) and Continental Aerosol Coefficient (Dashed Line), During CEWCOM-78.

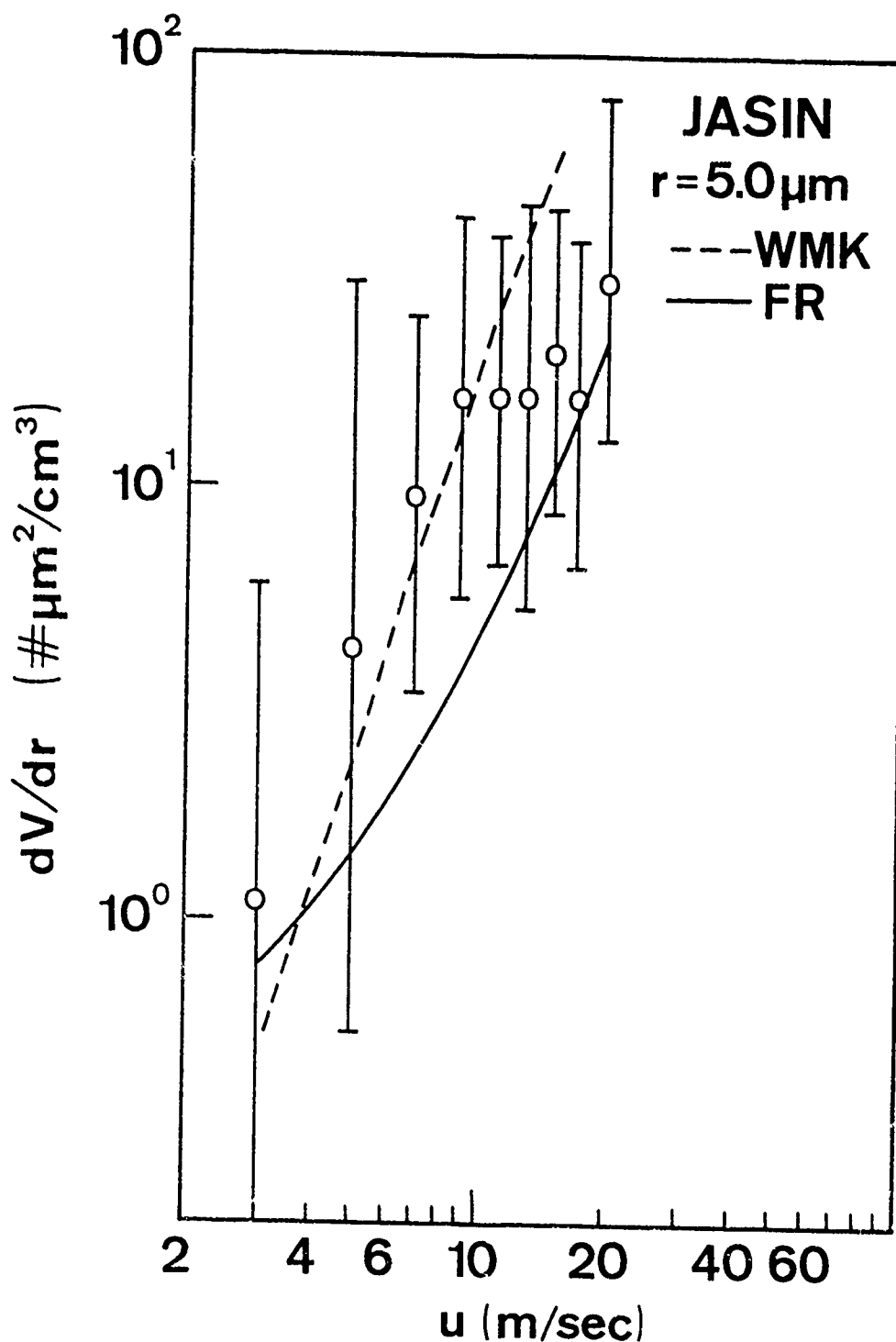


Figure 9. Aerosol Volume Spectral Density $dV/dr = V(r)$ Versus Wind Speed at $r = 5.0 \mu\text{m}$. The Circles are the JASIN Data, the Dashed Line is the WMK Model and the Solid Line is a Model from Fitzgerald and Ruskin (1975).

Fig. 5). If we go one step further and use the visible wavelength extinction with Fig. 6 to estimate the value of A' , then we see virtually no improvement (triangles in Fig. 5). At this point, the discrepancy is due to the sea salt component.

E. DISCUSSION

In the previous section we found that, if given a wind speed and humidity, the WMK was a good predictor of the average extinction observed, although 30% of the observations disagreed by more than a factor of 3. On average, the predictions based on 12 hour averages of wind speed were better than those based on 20 minute averages. The model was less successful when compared point by point with the actual observed extinction. In this case the 20 minute averages were slightly better. Some of the disagreement at high visibility was corrected by using a more realistic continental aerosol coefficient, the remainder is due to considerable overestimation of the sea salt component in roughly 20% of the samples.

It is important to realize that the WMK model is an average continental, equilibrium surface generation model. Deviations of the continental aerosol were shown in Figs. 6 and 8. The sea salt component is also subject to considerable deviations from equilibrium (this is one of the reasons for the 12 hour average wind speeds). This is further illustrated in Fig. 9 where measured $V_s(r)$ spectra are compared to the WMK model prediction (taken from Eqs. 2, 4 and 5) along with a similar type of model from Fitzgerald and Ruskin (1976). The error bars represent standard deviations (again, about a factor of three) about the equilibrium value.

The deviations from average and equilibrium values are more important for operational usage and somewhat less important for climatological and spectrum evaluation usage. An example where both usages are affected is the estimation of IR extinction using visible extinctions (visibility observations) and graphs similar to Fig 4. We have replotted the visible to IR ratio in Fig 10 with lines indicating the WMK model predictions using two different continental aerosol coefficients. Since the continental aerosol

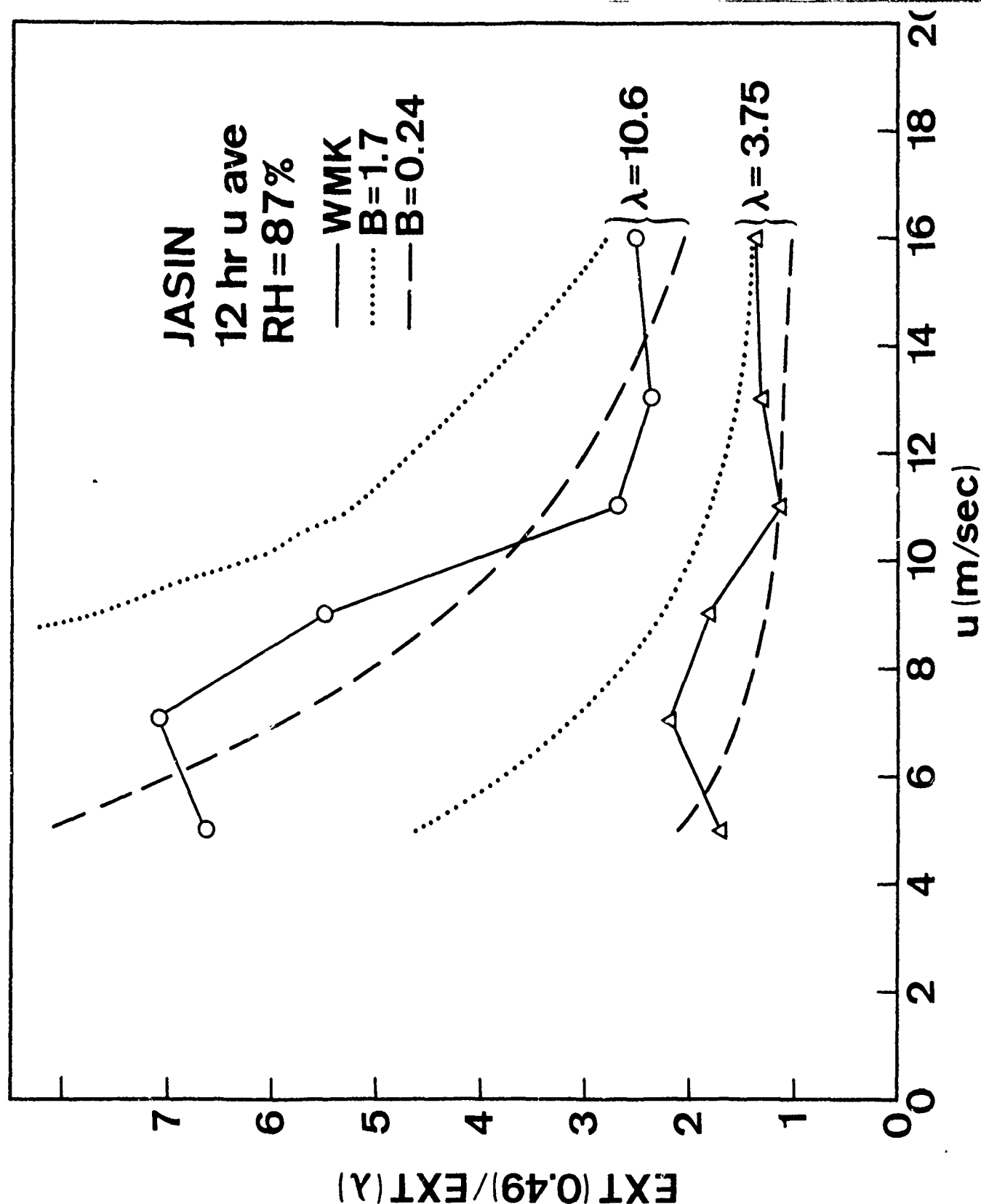


Figure 10. Ratio of Aerosol Extinction Coefficient at $\lambda = 0.49 \mu\text{m}$ to those at $\lambda = 3.75 \mu\text{m}$ and $\lambda = 10.6 \mu\text{m}$ (Circles - JASIN data, dashed line - WMK Model with $B = 0.24$, dotted line - WMK Model with $B = 1.7$) versus Wind Speed.

coefficients are correlated to visibility (Fig. 6), the correct ratio depends not only of wind speed but also the visibility observation.

Although we have dealt with the stochastic properties of ensemble averages of the aerosols, variations about the average are not necessarily random but are primarily due to changes in synoptic and mesoscale weather patterns. In the case of the continental aerosol component, this is basically a question of air-mass history. In the case of the sea salt aerosol, it is a question of changing surface generation rates (wind speed) and the production, removal and mixing mechanisms in the marine atmospheric boundary layer. Since the surface generated aerosols are quickly mixed vertically to fill the boundary layer, rapid changes in the boundary layer height, h , will be reflected in changes in the sea salt aerosol density and, therefore, the extinction coefficient. In Fig 11 we can see that fractional variations in h are highly correlated with variations in the visible extinction. The correlation with $10.6 \mu\text{m}$ extinction is considerably less because the large size aerosols (which are heavier contributors to IR extinctions) reach equilibrium more quickly after changes in surface conditions.

The findings and recommendations of this study are summarized below:

- 1) The WMK continental coefficient should be changed from $B = 1.7$ to $B = 0.24$
- 2) For climatological purposes (Fig 3), the model predictions of average extinction are very good (12 hour average wind speeds preferred).
- 3) For operational purposes (Fig 5), the model predictions of observed extinction systematically overestimate the extinction under high visibility conditions. The random error is typically a factor of 3.
- 4) Calculation of IR extinction from visibility estimates (Fig 10) is subject to systematic error due to variations in the continental background (Fig 6).
- 5) Changes in visible extinction over four hour periods can be highly correlated with changes in the mixed layer height.

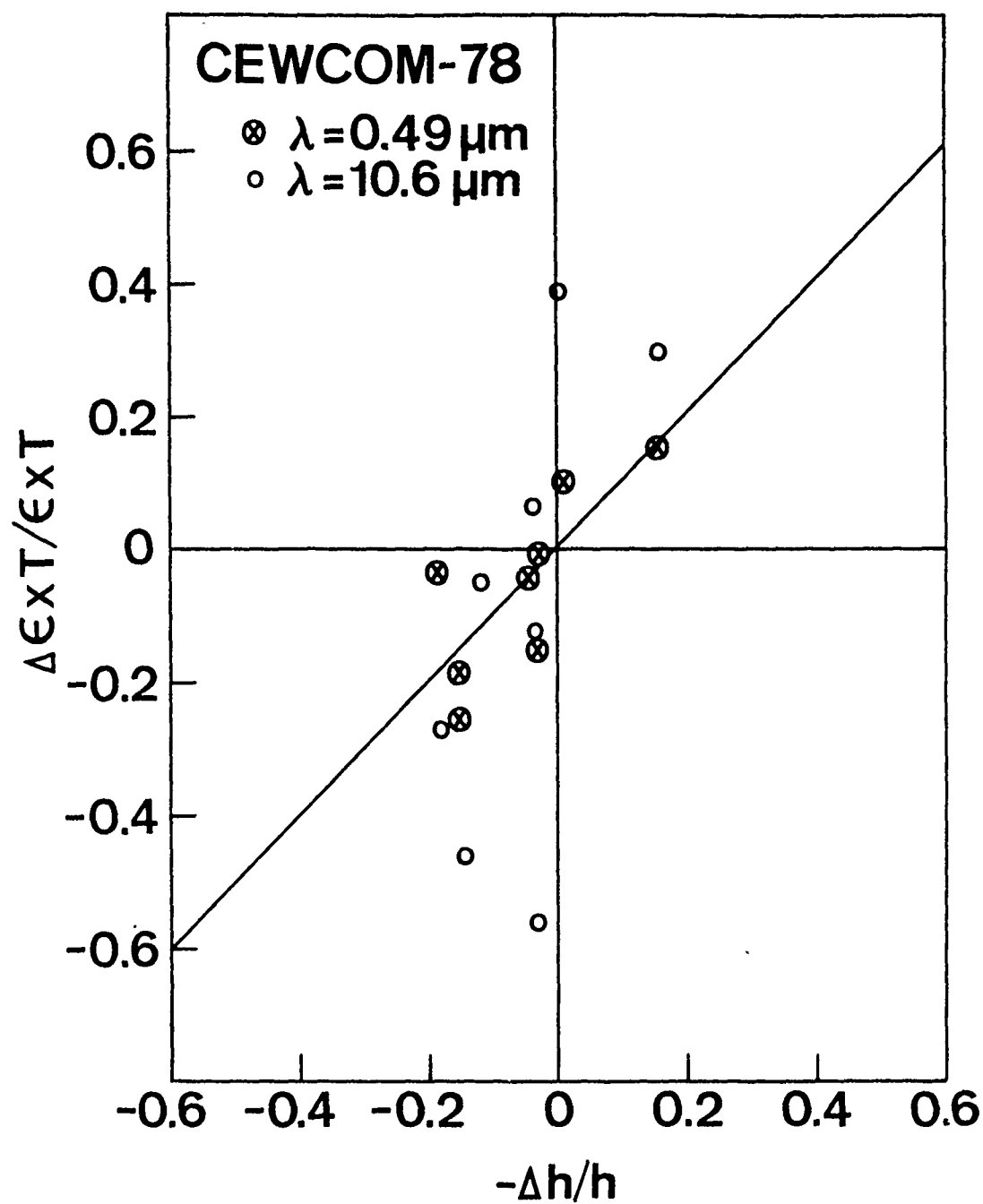


Figure 11. Fractional Change of Aerosol Extinction Coefficient (Circled X - Visible, Circles - IR) Versus Changes in Mixed Layer Height, h . The Data is for Successive Four Hour Average Periods from May 19-20 of CEWCOM-78.

APPENDICES

APPENDIX A

Meteorological and Aerosol Extinction
Data from JASIN. The Time is GMT.

DATE	TIME	FILE	Ts C.	Tair C.	RH %	U M/S	Extinction (Km ⁻¹) 3.250	Extinction (Km ⁻¹) 10.52
8/17/78	14:33	1	13.7	14.5	79.0	10.0	.967E+01	.660E-02
8/17/78	14:53	2	13.7	14.3	84.0	9.9	.135E+00	.782E-02
8/17/78	15:13	3	13.5	14.3	82.0	7.5	.104E+00	.450E-02
8/19/78	05:57	15	12.8	13.1	60.0	10.1	.282E+00	.752E-01
8/19/78	06:37	17	12.8	13.3	71.0	10.1	.336E+00	.964E-01
8/19/78	06:57	18	12.8	13.4	68.0	10.6	.345E+00	.947E-01
8/19/78	07:17	19	12.8	13.4	67.0	11.0	.520E+00	.796E-01
8/19/78	07:37	20	12.8	13.4	90.0	11.0	.318E+00	.866E-01
8/19/78	08:37	23	12.8	13.6	86.0	11.3	.304E+00	.710E-01
8/19/78	08:57	24	12.8	13.6	88.0	11.0	.369E+00	.124E+00
8/19/78	09:17	25	12.8	13.5	86.0	10.9	.384E+00	.139E+00
8/19/78	09:37	26	12.8	13.6	86.0	11.3	.373E+00	.136E+00
8/19/78	09:57	27	12.8	13.6	86.0	11.3	.383E+00	.144E+00
8/19/78	10:17	28	12.8	13.6	83.0	11.4	.369E+00	.128E+00
8/19/78	10:57	30	12.8	13.7	68.0	12.0	.367E+00	.129E+00
8/19/78	11:17	31	12.8	13.8	63.0	11.6	.381E+00	.178E+00
8/19/78	11:37	32	12.8	13.8	60.0	11.7	.393E+00	.157E+00
8/19/78	11:57	33	12.8	14.0	57.0	11.7	.369E+00	.143E+00
8/19/78	12:57	36	12.8	13.6	76.0	11.9	.544E+00	.241E+00
8/19/78	13:17	37	12.8	13.6	81.0	12.2	.417E+00	.165E+00
8/19/78	13:37	38	12.8	13.7	81.0	11.9	.388E+00	.160E+00

DATE	TIME	FILE #	Ts C	Tair C	RH %	U M/S	Extinction (Km^-1) 3.750	4.080	10.52
8/19/78	13:57	39	12.8	13.7	81.0	11.2	.343E+00	.281E+00	.148E+00
8/19/78	15:17	43	12.8	13.6	87.0	11.9	.329E+00	.269E+00	.141E+00
8/19/78	15:37	44	12.8	13.3	90.0	12.0	.337E+00	.270E+00	.145E+00
8/19/78	15:57	45	12.8	13.1	91.0	11.6	.291E+00	.234E+00	.116E+00
8/19/78	16:17	46	12.8	13.0	91.0	11.3	.382E+00	.320E+00	.186E+00
8/19/78	16:37	47	12.8	13.0	92.0	10.6	.403E+00	.354E+00	.198E+00
8/19/78	16:57	48	12.8	13.0	92.0	10.7	.303E+00	.258E+00	.121E+00
8/19/78	17:17	49	12.8	13.1	91.0	10.9	.273E+00	.235E+00	.106E+00
8/19/78	17:37	50	12.8	13.1	91.0	11.1	.256E+00	.224E+00	.101E+00
8/19/78	17:57	51	12.8	13.1	91.0	10.6	.346E+00	.311E+00	.169E+00
8/19/78	18:17	52	12.8	13.0	92.0	11.0	.263E+00	.233E+00	.107E+00
8/19/78	18:37	53	12.8	13.1	85.0	10.4	.228E+00	.198E+00	.838E-01
8/19/78	19:57	57	12.8	13.1	66.0	9.9	.225E+00	.187E+00	.795E-01
8/19/78	20:17	58	12.8	13.1	66.0	9.4	.249E+00	.209E+00	.953E-01
8/19/78	20:37	59	12.8	13.0	64.0	10.0	.201E+00	.155E+00	.643E-01
8/19/78	20:57	60	12.8	12.8	66.0	10.3	.376E+00	.317E+00	.170E+00
8/19/78	21:17	61	12.8	12.7	68.0	11.6	.315E+00	.268E+00	.113E+00
8/19/78	21:37	62	12.8	12.7	67.0	11.6	.312E+00	.253E+00	.119E+00
8/19/78	21:57	63	12.8	12.9	66.0	11.9	.385E+00	.319E+00	.161E+00
8/19/78	22:17	64	12.8	12.7	68.0	12.1	.346E+00	.285E+00	.134E+00
8/19/78	22:37	65	12.8	12.8	67.0	12.0	.317E+00	.255E+00	.111E+00
8/19/78	22:57	66	12.8	12.8	68.0	11.9	.273E+00	.220E+00	.921E-01

DATE	TIME	FILE #	TS C	TAIR C	RH %	U M/S	Extinction (Km ⁻¹)	
							4980	10.52
8/19/78	23:17	67	12.8	12.8	68.0	11.9	.317E+00	.274E+00
8/19/78	23:37	68	12.8	12.8	67.0	11.9	.258E+00	.215E+00
8/20/78	06:44	69	12.8	12.6	84.0	9.9	.226E+00	.189E+00
8/20/78	06:54	70	12.8	12.6	85.0	9.3	.218E+00	.187E+00
8/20/78	07:01	71	12.8	12.5	87.0	10.0	.163E+00	.129E+00
8/20/78	08:54	73	12.8	12.7	85.0	10.9	.212E+00	.174E+00
8/20/78	09:14	74	12.8	12.7	86.0	11.2	.220E+00	.177E+00
8/20/78	09:34	75	12.8	12.7	87.0	14.9	.356E+00	.290E+00
8/20/78	09:54	76	12.8	12.0	86.0	14.6	.162E+00	.116E+00
8/20/78	10:14	77	12.8	11.8	84.0	14.2	.161E+00	.113E+00
8/20/78	10:34	78	12.8	12.0	85.0	11.4	.180E+00	.115E+00
8/20/78	10:54	79	12.8	12.2	91.0	9.5	.184E+00	.129E+00
8/20/78	11:14	80	12.8	12.4	102.0	9.3	.243E+00	.176E+00
8/20/78	12:54	85	12.8	12.2	111.0	11.6	.371E+00	.278E+00
8/20/78	13:14	86	12.8	11.9	116.0	11.1	.382E+00	.299E+00
8/20/78	13:34	87	12.8	11.9	116.0	13.4	.177E+01	.130E+01
8/20/78	15:14	92	12.8	12.7	93.0	16.8	.546E+00	.394E+00
8/20/78	15:54	94	12.8	11.8	72.0	19.7	.342E+00	.226E+00
8/20/78	16:14	95	12.8	11.8	71.0	21.4	.462E+00	.316E+00
8/20/78	16:34	96	12.8	11.3	72.0	21.9	.337E+00	.234E+00
8/20/78	16:54	97	12.8	11.3	73.0	20.7	.301E+00	.219E+00
8/20/78	17:14	98	12.8	11.6	73.0	18.5	.324E+00	.228E+00
								.162E+00

DATE	TIME	FILE	Ts C	Tair C	RH %	U M/S	Extinction (K ^m ⁻¹) 3.750	4880	10.52
8/20/78	17:34	99	12.8	11.7	77.0	16.4	.242E+00	.184E+00	.124E+00
8/20/78	17:54	100	12.8	11.9	75.0	16.4	.210E+00	.159E+00	.106E+00
8/20/78	18:14	101	12.8	12.3	71.0	17.9	.206E+00	.154E+00	.101E+00
8/20/78	19:14	104	12.8	12.4	70.0	14.4	.138E+01	.731E+00	.647E+00
8/20/78	19:34	105	12.8	11.8	76.0	13.6	.311E+00	.225E+00	.145E+00
8/20/78	19:54	106	12.8	12.3	71.0	13.5	.330E+00	.235E+00	.152E+00
8/20/78	20:14	107	12.8	12.5	71.0	15.5	.318E+00	.220E+00	.144E+00
8/20/78	20:34	108	12.8	12.5	72.0	15.7	.329E+00	.233E+00	.148E+00
8/20/78	20:54	109	12.8	12.4	75.0	14.9	.430E+00	.303E+00	.202E+00
8/20/78	21:14	110	12.8	12.4	76.0	15.3	.404E+00	.277E+00	.178E+00
8/20/78	21:34	111	12.8	12.3	77.0	14.7	.373E+00	.253E+00	.157E+00
8/20/78	21:54	112	12.8	12.5	75.0	14.8	.393E+00	.278E+00	.174E+00
8/20/78	22:14	113	12.8	12.5	73.0	14.5	.390E+00	.273E+00	.175E+00
8/20/78	22:34	114	12.8	12.6	70.0	15.6	.344E+00	.242E+00	.159E+00
8/20/78	22:54	115	12.8	12.7	69.0	14.6	.332E+00	.241E+00	.152E+00
8/20/78	23:14	116	12.8	12.6	70.0	15.2	.335E+00	.232E+00	.150E+00
8/20/78	23:34	117	12.8	12.6	69.0	15.6	.339E+00	.226E+00	.146E+00
8/20/78	23:54	118	12.8	12.6	71.0	14.4	.320E+00	.228E+00	.144E+00
8/21/78	00:14	119	12.8	12.6	75.0	14.2	.329E+00	.232E+00	.142E+00
8/21/78	00:34	120	12.8	12.5	75.0	14.6	.285E+00	.207E+00	.123E+00
8/21/78	00:54	121	12.8	12.5	76.0	14.6	.318E+00	.231E+00	.146E+00
8/21/78	01:14	122	12.8	12.4	77.0	14.4	.296E+00	.214E+00	.128E+00

DATE	TIME	FILE	Ts C	Tair C	RH %	U M/S	Extinction (Km ⁻¹)	10052
8/21/78	01:34	123	12.8	12.4	77.0	14.2	.294E+00	.132E+00
8/21/78	01:54	124	12.8	12.4	80.0	13.8	.313E+00	.139E+00
8/21/78	02:14	125	12.8	12.3	80.0	14.7	.251E+00	.112E+00
8/21/78	02:34	126	12.8	12.3	81.0	13.6	.258E+00	.114E+00
8/21/78	02:54	127	12.8	12.3	81.0	13.6	.258E+00	.113E+00
8/21/78	03:14	128	12.8	12.3	81.0	13.7	.226E+00	.997E-01
8/21/78	03:34	129	12.8	12.3	82.0	13.2	.240E+00	.105E+00
8/21/78	03:54	130	12.8	12.2	83.0	12.9	.240E+00	.110E+00
8/21/78	04:14	131	12.8	12.2	84.0	13.0	.225E+00	.982E-01
8/21/78	04:34	132	12.8	12.1	85.0	12.7	.217E+00	.933E-01
8/21/78	04:54	133	12.8	11.9	87.0	12.4	.289E+00	.138E+00
8/21/78	05:14	134	12.8	11.9	86.0	12.4	.193E+00	.823E-01
8/21/78	05:34	135	12.8	12.1	83.0	12.1	.177E+00	.787E-01
8/21/78	05:54	136	12.8	12.1	82.0	11.4	.161E+00	.641E-01
8/21/78	06:14	137	12.8	12.2	83.0	11.1	.168E+00	.659E-01
8/21/78	06:34	138	12.8	12.1	83.0	10.9	.167E+00	.659E-01
8/21/78	06:54	139	12.8	12.1	82.0	10.3	.158E+00	.588E-01
8/21/78	07:14	140	12.8	12.1	83.0	10.4	.155E+00	.613E-01
8/21/78	11:37	143	12.5	12.9	80.0	10.3	.142E+00	.575E-01
8/21/78	11:57	144	12.5	12.7	78.0	10.8	.124E+00	.418E-01
8/21/78	12:17	145	12.5	12.3	81.0	9.3	.100E+00	.405E-01
8/21/78	13:57	147	12.5	12.4	83.0	10.6	.128E+00	.445E-01

DATE	TIME	FILE	Is C	Tair C	RH %	U M/S	Extinction (Km ⁻¹) 3.750	10.52
8/24/78	14:17	148	12.5	12.4	81.0	10.8	.974E+01	.752E-01
8/21/78	14:37	149	12.5	12.4	74.0	9.5	.103E+00	.864E-01
8/21/78	14:57	150	12.5	12.5	81.0	9.5	.135E+00	.122E+00
8/21/78	16:17	154	12.5	12.0	87.0	10.2	.157E+00	.139E+00
8/21/78	16:37	155	12.5	12.2	86.0	8.9	.133E+00	.117E+00
8/21/78	16:57	156	12.5	12.3	83.0	9.1	.950E-01	.811E-01
8/21/78	17:37	158	12.5	12.3	90.0	15.3	.976E-01	.742E-01
8/21/78	18:17	160	12.5	12.2	109.0	10.5	.147E+00	.140E+00
8/21/78	18:37	161	12.5	12.2	110.0	10.1	.149E+00	.136E+00
8/21/78	18:57	162	12.5	12.1	113.0	9.5	.150E+00	.139E+00
8/21/78	20:17	166	12.5	12.2	112.0	9.7	.106E+00	.955E-01
8/21/78	20:37	167	12.5	12.2	115.0	11.1	.196E+00	.180E+00
8/21/78	20:57	168	12.5	12.1	116.0	10.3	.217E+00	.205E+00
8/21/78	21:17	169	12.5	12.1	114.0	11.4	.164E+00	.143E+00
8/21/78	22:17	172	12.5	12.0	100.0	13.0	.147E+00	.108E+00
8/21/78	22:37	173	12.5	11.9	99.0	10.0	.182E+00	.164E+00
8/21/78	22:57	174	12.5	11.7	98.0	9.1	.106E+00	.103E+00
8/21/78	23:17	175	12.5	11.5	97.0	9.7	.810E-01	.774E-01
8/22/78	01:37	182	12.5	12.1	92.0	9.7	.703E-01	.625E-01
8/22/78	01:57	183	12.5	12.0	94.0	9.5	.890E-01	.889E-01
8/22/78	02:17	184	12.5	11.7	97.0	9.4	.802E-01	.756E-01
8/22/78	04:17	188	12.3	11.4	466.0	7.7	.119E+00	.114E+00

DATE	TIME	FILE	TS	Tair	RH	U	Extinction (Km^-1)	
			C	C	%	M/S		
8/22/78	04:30	189	12.1	11.4	94.0	8.5	.922E-01	.944E-01
8/22/78	05:58	190	12.1	11.5	90.0	8.6	.927E-01	.856E-01
8/22/78	06:18	191	12.1	11.6	90.0	9.0	.107E+00	.102E+00
8/22/78	06:58	192	12.1	11.7	90.0	9.5	.126E+00	.120E+00
8/22/78	06:58	193	12.1	11.8	90.0	14.9	.116E+00	.974E-01
8/22/78	07:18	194	12.1	11.9	89.0	14.1	.934E-01	.785E-01
8/22/78	07:38	195	12.1	12.0	97.0	12.7	.942E-01	.807E-01
8/22/78	07:58	196	12.1	12.2	87.0	7.5	.944E-01	.874E-01
8/22/78	08:18	197	12.1	12.2	88.0	8.3	.107E+00	.100E+00
8/23/78	00:05	199	12.1	11.8	88.0	9.4	.663E-01	.613E-01
8/23/78	00:25	200	12.1	11.6	84.0	10.8	.526E-01	.427E-01
8/23/78	00:45	201	12.1	11.6	80.0	16.3	.478E-01	.361E-01
8/23/78	01:05	202	12.1	11.9	81.0	15.4	.775E-01	.647E-01
8/23/78	01:25	203	12.1	11.9	88.0	15.0	.113E+00	.919E-01
8/23/78	01:45	204	12.1	11.3	92.0	9.2	.838E-01	.748E-01
8/23/78	02:05	205	12.1	11.4	91.0	8.0	.634E-01	.570E-01
8/23/78	02:25	206	12.1	11.7	85.0	8.6	.589E-01	.505E-01
8/23/78	02:45	207	12.1	11.9	81.0	13.6	.671E-01	.525E-01
8/23/78	03:05	208	12.1	12.3	80.0	15.9	.930E-01	.749E-01
8/23/78	03:25	209	12.1	12.2	82.0	16.2	.114E+00	.937E-01
8/23/78	03:45	210	12.1	12.4	79.0	15.3	.856E-01	.679E-01
8/23/78	04:05	211	12.1	12.4	83.0	15.8	.103E+00	.882E-01

DATE	TIME	FILE	TS	Toir	RII	U	Extinction (Km ⁻¹)
		#	C	C	%	M/S	
8/23/78	04:25	212	12.1	12.3	83.0	15.4	.4800 3.750 10.59 .691E-01 .346E-01
8/23/78	04:45	213	12.1	12.3	86.0	14.0	.973E-01 .821E-01 .376E-01
8/23/78	05:05	214	12.1	12.2	88.0	7.0	.105E+00 .969E-01 .472E-01
8/23/78	05:25	215	12.4	12.1	88.0	7.2	.124E+00 .118E+00 .543E-01
8/23/78	05:44	216	12.5	12.0	87.0	8.7	.101E+00 .893E-01 .375E-01
8/23/78	07:12	217	12.5	12.2	81.0	9.3	.649E-01 .505E-01 .154E-01
8/23/78	07:32	218	12.5	12.0	82.0	9.5	.835E-01 .686E-01 .269E-01
8/23/78	07:52	219	12.5	12.1	79.0	10.3	.789E-01 .669E-01 .311E-01
8/23/78	08:12	220	12.5	12.1	81.0	17.3	.617E-01 .454E-01 .125E-01
8/23/78	08:32	221	12.5	11.9	84.0	17.9	.108E+00 .895E-01 .347E-01
8/23/78	08:52	222	12.5	11.9	82.0	15.6	.796E-01 .673E-01 .271E-01
8/23/78	09:12	223	12.5	12.0	82.0	9.3	.874E-01 .800E-01 .354E-01
8/23/78	09:32	224	12.5	11.9	84.0	8.7	.941E-01 .868E-01 .355E-01
8/23/78	09:46	225	12.5	12.1	81.0	8.5	.756E-01 .685E-01 .212E-01
8/23/78	11:14	226	12.5	12.2	82.0	9.0	.104E+00 .941E-01 .484E-01
8/23/78	11:34	227	12.5	12.0	84.0	11.3	.856E-01 .753E-01 .326E-01
8/23/78	11:54	228	12.5	11.7	86.0	10.1	.935E-01 .805E-01 .520E-01
8/23/78	11:58	229	12.5	11.6	86.0	13.9	.320E-01 .230E-01 .318E-02
8/23/78	13:28	230	12.5	12.2	83.0	9.8	.695E-01 .626E-01 .309E-01
8/23/78	13:48	231	12.5	12.5	80.0	10.7	.805E-01 .706E-01 .351E-01
8/23/78	14:08	232	12.5	12.6	83.0	8.6	.969E-01 .921E-01 .436E-01
8/23/78	14:18	233	12.5	12.4	83.0	14.3	.792E-01 .716E-01 .300E-01

DATE	TIME	FILE	Ts C	Tair C	RH %	U M/S	Extinction (Km^-1)	
							.4889	.3.750
8/23/78	15:28	234	12.5	13.1	78.0	9.0	.686E-01	.663E-01
8/23/78	15:48	235	12.5	13.1	79.0	9.1	.759E-01	.668E-01
8/23/78	16:08	236	12.5	13.0	81.0	8.6	.789E-01	.727E-01
8/23/78	16:28	237	12.5	12.9	84.0	14.2	.865E-01	.712E-01
8/23/78	16:48	238	12.5	12.4	87.0	15.1	.146E+00	.128E+00
8/23/78	17:08	239	12.5	12.3	88.0	13.8	.112E+00	.999E-01
8/23/78	17:28	240	12.5	12.3	86.0	15.8	.118E+00	.978E-01
8/23/78	17:48	241	12.5	12.3	98.0	14.8	.989E-01	.866E-01
8/23/78	20:48	250	12.5	11.9	102.0	13.7	.627E-01	.424E-01
8/23/78	21:08	251	12.5	12.0	96.0	10.5	.880E-01	.693E-01
8/23/78	21:28	252	12.5	12.0	100.0	9.8	.840E-01	.652E-01
8/23/78	21:48	253	12.5	11.6	105.0	17.0	.204E+00	.182E+00
8/23/78	22:48	256	12.5	11.6	99.0	10.7	.134E+00	.115E+00
8/23/78	23:08	257	12.5	11.8	96.0	9.9	.107E+00	.944E-01
8/23/78	23:28	258	12.5	12.0	97.0	9.4	.114E+00	.102E+00
8/24/78	01:28	264	12.5	12.3	84.0	11.3	.694E-01	.714E-01
8/24/78	11:17	265	12.5	12.6	84.0	9.8	.202E+00	.167E+00
8/24/78	11:37	266	12.5	12.7	81.0	9.4	.164E+00	.124E+00
8/24/78	11:57	267	12.5	12.7	80.0	13.1	.169E+00	.120E+00
8/24/78	13:13	268	12.5	12.7	79.0	9.4	.161E+00	.123E+00
8/24/78	13:33	269	12.5	12.9	79.0	8.5	.175E+00	.138E+00
8/24/78	13:53	270	12.5	12.9	74.0	9.9	.181E+00	.139E+00

DATE	TIME	FILE	T ₀ C	T ₀₁ C	RU %	U M/S	Extinction (K _m ⁻¹) 3.250	Extinction (K _m ⁻¹) 10.52
8/24/78	14:13	271	12.5	12.7	71.0	10.1	.157E+00	.420E-01
8/24/78	14:33	272	12.5	12.9	63.0	7.3	.159E+00	.448E-01
8/24/78	14:53	273	12.5	13.1	67.0	8.7	.162E+00	.465E-01
8/24/78	15:13	274	12.5	13.1	65.0	9.4	.160E+00	.428E-01
8/24/78	15:33	275	12.5	13.2	64.0	8.7	.166E+00	.456E-01
8/24/78	15:53	276	12.5	13.2	62.0	8.8	.159E+00	.379E-01
8/24/78	16:13	277	12.5	13.3	62.0	9.0	.166E+00	.446E-01
8/24/78	16:33	278	12.5	13.3	65.0	9.3	.174E+00	.454E-01
8/24/78	16:53	279	12.5	13.3	74.0	9.0	.146E+00	.329E-01
8/24/78	17:05	280	12.5	13.2	77.0	8.5	.172E+00	.423E-01
8/24/78	20:34	282	12.5	12.1	75.0	12.7	.156E+00	.357E-01
8/24/78	20:54	283	12.5	12.0	77.0	10.5	.143E+00	.259E-01
8/24/78	21:14	284	12.5	11.9	79.0	6.3	.145E+00	.312E-01
8/24/78	21:34	285	12.5	11.9	81.0	6.1	.146E+00	.326E-01
8/24/78	22:34	288	12.5	11.9	83.0	9.5	.125E+00	.191E-01
8/24/78	22:54	289	12.5	11.9	83.0	5.2	.155E+00	.410E-01
8/24/78	23:14	290	12.5	11.8	84.0	5.3	.155E+00	.388E-01
8/25/78	03:34	303	12.5	11.9	79.0	6.2	.114E+00	.189E-01
8/25/78	05:54	304	12.5	11.9	80.0	5.8	.111E+00	.177E-01
8/25/78	04:14	305	12.5	11.9	83.0	7.4	.113E+00	.187E-01
8/25/78	05:34	309	12.5	12.0	83.0	6.4	.120E+00	.171E-01
8/25/78	05:54	310	12.5	12.0	84.0	6.3	.117E+00	.166E-01

DATE	TIME	FILE #	Ts C	air C	RH %	U m/s	4880	Extinction (Km^-1) 3.750	10.52
8/25/78	06:14	311	12.5	12.0	84.0	6.5	.115E+00	.860E-01	.157E-01
8/25/78	07:06	313	12.5	12.3	79.0	6.0	.114E+00	.848E-01	.153E-01
8/25/78	07:50	314	12.5	12.2	80.0	5.7	.111E+00	.862E-01	.145E-01
8/25/78	08:16	315	12.5	12.2	79.0	6.0	.107E+00	.788E-01	.140E-01
8/25/78	08:29	316	12.5	12.1	78.0	6.2	.105E+00	.758E-01	.126E-01
8/25/78	09:53	317	12.5	12.2	81.0	5.1	.915E-01	.652E-01	.110E-01
8/25/78	10:13	318	12.5	12.2	81.0	4.8	.840E-01	.671E-01	.109E-01
8/25/78	10:21	319	12.5	12.3	81.0	5.8	.839E-01	.689E-01	.116E-01
8/25/78	11:36	320	12.8	12.5	81.0	5.9	.971E-01	.807E-01	.139E-01
8/25/78	11:56	321	12.9	12.5	81.0	4.8	.789E-01	.649E-01	.103E-01
8/25/78	12:11	322	12.9	12.6	81.0	6.1	.895E-01	.735E-01	.120E-01
8/25/78	13:36	323	12.9	12.8	80.0	5.7	.638E-01	.497E-01	.765E-02
8/25/78	13:56	324	12.9	12.5	79.0	5.2	.580E-01	.457E-01	.709E-02
8/25/78	16:27	327	13.2	12.3	83.0	4.9	.417E-01	.334E-01	.555E-02
8/25/78	16:47	328	13.2	12.1	83.0	4.6	.391E-01	.291E-01	.415E-02
8/25/78	17:07	329	13.2	12.0	84.0	3.7	.409E-01	.350E-01	.567E-02
8/25/78	17:13	330	13.2	12.0	83.0	3.9	.328E-01	.249E-01	.362E-02
8/25/78	22:16	335	13.2	12.4	80.0	4.8	.427E-01	.360E-01	.658E-02
8/25/78	22:36	336	13.2	12.4	80.0	4.5	.371E-01	.308E-01	.477E-02
8/26/78	00:16	341	13.2	12.4	83.0	3.9	.671E-01	.439E-01	.101E-01
8/26/78	00:36	342	13.2	12.3	83.0	4.0	.724E-01	.527E-01	.127E-01
8/26/78	00:56	343	13.2	12.3	84.0	4.3	.118E+00	.714E-01	.209E-01

DATE	TIME	FILE	TS	Pair	RH	U	Extinction (Kw^-1)
		#	C	C	%	M/S	
8/26/78	02:16	347	13.2	12.3	83.0	6.3	.507E-01 .137E-01
8/26/78	02:36	348	13.1	12.3	84.0	4.8	.224E+00 .164E+00
8/26/78	02:56	349	13.1	12.3	85.0	4.9	.443E+00 .345E+01
8/26/78	03:16	350	13.1	12.3	86.0	7.2	.225E+00 .157E+00
8/26/78	03:36	351	13.1	12.3	87.0	12.0	.958E-01 .529E-01
8/26/78	03:56	352	13.1	12.3	88.0	12.2	.602E-01 .340E-01
8/26/78	04:16	353	13.2	12.4	89.0	10.7	.215E+00 .162E+00
8/26/78	04:36	354	13.1	12.4	88.0	5.0	.137E+00 .115E+00
8/26/78	04:56	355	13.1	12.4	89.0	5.1	.843E-01 .622E-01
8/26/78	05:16	356	13.1	12.4	88.0	5.2	.386E-01 .201E-01
8/26/78	06:36	360	13.1	12.4	89.0	4.7	.665E+01 .470E+01
8/26/78	06:56	361	13.1	12.4	89.0	4.7	.201E+01 .137E+01
8/26/78	07:12	362	13.1	12.4	92.0	5.1	.240E+01 .182E+01
8/26/78	09:13	363	13.1	12.3	96.0	5.1	.757E+01 .693E+01
8/26/78	09:33	364	13.1	12.3	96.0	4.7	.717E+01 .556E+01
8/26/78	09:53	365	13.1	12.3	97.0	5.2	.681E+01 .609E+01
8/26/78	09:58	366	13.1	12.3	96.0	5.7	.559E+01 .492E+01
8/26/78	12:52	367	13.1	12.4	96.0	5.4	.916E+00 .949E+00
8/26/78	13:12	368	13.1	12.4	94.0	5.3	.288E-01 .189E-01
8/26/78	13:32	369	13.1	12.4	93.0	5.3	.180E-01 .845E-02
8/26/78	13:52	370	13.1	12.4	91.0	5.5	.160E-01 .677E-02
8/26/78	14:03	371	13.1	12.4	90.0	6.0	.238E-01 .762E-02

DATE	TIME	FILE	Ts C	Tair C	RH %	U N/S	Extinction (KM^-1) 4880	Extinction (KM^-1) 3.750	10.59
8/26/78	15:22	372	13.1	12.6	92.0	4.4	.277E-01	.125E-01	.345E-02
8/26/78	15:42	373	13.1	12.5	90.0	5.2	.282E-01	.851E-02	.219E-02
8/26/78	15:43	374	13.1	12.5	89.0	4.7	.348E-01	.143E-01	.338E-02
8/26/78	17:18	375	13.1	12.5	86.0	5.7	.207E-01	.126E-01	.351E-02
8/26/78	17:38	376	13.1	12.3	88.0	5.5	.181E-01	.106E-01	.248E-02
8/26/78	17:58	377	13.1	12.4	89.0	5.2	.221E-01	.125E-01	.338E-02
8/26/78	18:18	378	13.1	12.4	91.0	6.2	.332E-01	.177E-01	.518E-02
8/26/78	18:38	379	13.1	12.4	94.0	14.1	.421E-01	.259E-01	.794E-02
8/26/78	18:58	380	13.1	12.2	94.0	13.9	.249E-01	.133E-01	.313E-02

DATE	TIME	FILE	TS C	TAIR C	RH %	U M/S	Extinction (Km^-1) 3.750	10.59
8/26/78	19:18	1	13.1	12.3	93.0	8.9	.215E-01	.254E-02
8/26/78	19:38	2	13.1	12.4	93.0	4.2	.142E-01	.149E-02
8/26/78	19:58	3	13.1	12.4	91.0	3.3	.107E-01	.164E-02
8/26/78	20:18	4	13.1	12.5	83.0	3.1	.594E-02	.678E-03
8/26/78	21:38	8	13.1	12.4	88.0	3.6	.700E-02	.692E-03
8/26/78	21:58	9	13.1	12.5	86.0	3.3	.556E-02	.431E-03
8/26/78	22:18	10	13.1	12.5	92.0	4.3	.497E-02	.286E-03
8/26/78	22:38	11	13.1	12.5	80.0	7.4	.369E-02	.170E-03
8/26/78	23:58	15	13.1	12.2	82.0	4.3	.421E-02	.244E-03
8/27/78	00:18	16	13.1	12.0	83.0	4.0	.474E-02	.343E-03
8/27/78	01:38	20	13.1	11.7	87.0	5.6	.511E-02	.587E-03
8/27/78	02:38	23	13.1	11.5	91.0	3.8	.510E-02	.477E-03
8/27/78	02:58	24	13.1	11.7	91.0	3.9	.696E-02	.895E-03
8/27/78	03:18	25	13.1	11.7	93.0	4.1	.660E-02	.104E-02
8/27/78	04:58	30	13.2	11.8	100.0	5.7	.308E-01	.123E-01
8/27/78	05:18	31	13.2	11.8	100.0	5.8	.237E-01	.835E-02
8/27/78	05:38	32	13.2	11.7	100.0	5.7	.173E-01	.407E-02
8/27/78	06:58	36	13.2	12.0	95.0	5.3	.205E-01	.519E-02
8/27/78	07:18	37	13.2	12.2	95.0	4.8	.228E-01	.555E-02
8/27/78	07:38	38	13.2	12.2	91.0	4.6	.230E-01	.520E-02
8/27/78	07:58	39	13.2	12.3	92.0	12.3	.274E-01	.586E-02

DATE	TIME	FILE #	Is C.	fair C.	RH %	U M/S	Extinction (Km^-1)	10.52
							3.250	
8/27/78	08:02	40	13.2	12.3	92.0	13.7	.225E-01	.134E-01
8/27/78	08:54	41	13.2	12.4	90.0	4.6	.208E-01	.138E-01
8/27/78	09:14	42	13.2	12.4	91.0	4.2	.169E-01	.127E-01
8/27/78	09:31	43	13.2	12.5	91.0	4.0	.165E-01	.138E-01
8/27/78	10:51	44	13.2	12.2	96.0	3.8	.511E-02	.147E-02
8/27/78	11:11	45	13.2	12.3	91.0	4.2	.537E-02	.219E-02
8/27/78	11:31	46	13.2	12.4	84.0	4.0	.679E-02	.302E-02
8/27/78	12:47	47	13.2	12.4	82.0	2.6	.942E-02	.522E-02
8/27/78	13:27	49	13.2	12.7	83.0	3.5	.841E-02	.432E-02
8/27/78	13:46	50	13.1	12.7	84.0	4.3	.912E-02	.413E-02
8/27/78	16:47	51	13.5	12.3	91.0	5.6	.401E-01	.388E-01
8/27/78	17:07	52	13.6	12.2	94.0	6.3	.125E+00	.103E+00
8/27/78	17:27	53	13.6	12.1	93.0	6.6	.395E-01	.395E-01
8/27/78	17:33	54	13.6	12.1	94.0	10.0	.205E-01	.162E-01
8/27/78	18:59	56	13.6	12.0	91.0	4.7	.267E-01	.156E-01
8/27/78	19:19	57	13.6	12.1	91.0	4.6	.230E-01	.117E-01
8/27/78	19:39	58	13.6	12.0	91.0	4.1	.198E-01	.119E-01
8/27/78	19:59	59	13.6	12.1	91.0	11.8	.215E-01	.109E-01
8/27/78	20:19	60	13.6	12.1	92.0	12.7	.201E-01	.108E-01
8/27/78	20:39	61	13.6	12.0	91.0	11.9	.156E-01	.814E-02
8/27/78	20:59	62	13.6	12.0	91.0	4.3	.176E-01	.755E-02
8/27/78	21:19	63	13.6	12.0	91.0	4.3	.170E-01	.650E-02

DATE	TIME	FILE #	Is C	Tair C	RU %	U M/S	Extinction (K ^m -1)	4880	3.750	10.52
8/27/78	21:39	64	13.6	12.0	92.0	4.7	.592E-02	.192E-01	.592E-02	.217E-02
8/27/78	21:59	65	13.6	12.0	94.0	11.5	.786E-02	.171E-01	.786E-02	.267E-02
8/27/78	22:19	66	13.6	12.1	95.0	13.0	.962E-02	.210E-01	.962E-02	.446E-02
8/27/78	22:39	67	13.6	11.9	97.0	13.4	.636E-01	.036E-01	.637E-01	.211E-01
8/27/78	22:59	68	13.6	11.7	99.0	14.0	.599E-01	.953E-01	.599E-01	.395E-01
8/27/78	23:19	69	13.6	11.5	100.0	14.0	.662E-01	.662E-01	.349E-01	.171E-01
8/28/78	00:19	72	13.6	11.3	100.0	5.8	.227E-01	.322E-01	.227E-01	.127E-01
8/28/78	00:39	73	13.6	11.3	99.0	6.0	.111E-01	.169E-01	.111E-01	.401E-02
8/28/78	01:59	77	13.6	11.8	92.0	5.9	.527E-02	.974E-02	.527E-02	.144E-02
8/28/78	02:19	78	13.6	12.0	92.0	5.0	.493E-02	.965E-02	.493E-02	.159E-02
8/28/78	02:39	79	13.6	12.1	92.0	5.4	.509E-02	.101E-01	.509E-02	.134E-02
8/28/78	02:59	80	13.6	12.1	93.0	12.6	.480E-02	.114E-01	.480E-02	.959E-03
8/28/78	03:19	81	13.6	12.1	93.0	14.2	.101E-01	.168E-01	.101E-01	.244E-02
8/28/78	03:39	82	13.6	11.8	94.0	11.1	.702E-02	.113E-01	.702E-02	.189E-02
8/28/78	03:59	83	13.6	11.7	95.0	5.6	.955E-02	.127E-01	.955E-02	.303E-02
8/28/78	04:19	84	13.6	11.7	94.0	4.2	.720E-02	.975E-02	.720E-02	.204E-02
8/28/78	04:39	85	13.6	11.9	90.0	4.8	.638E-02	.111E-01	.638E-02	.199E-02
8/28/78	06:19	90	13.6	12.2	90.0	5.2	.759E-02	.129E-01	.759E-02	.171E-02
8/28/78	06:39	91	13.6	12.2	91.0	5.9	.462E-02	.195E-01	.145E-01	.462E-02
8/28/78	06:59	92	13.6	12.1	91.0	6.0	.235E-02	.156E-01	.104E-01	.235E-02
8/28/78	08:26	94	13.6	12.4	94.0	5.7	.481E-01	.763E-01	.676E-01	.481E-01
8/28/78	08:46	95	13.6	12.4	94.0	5.3	.164E-01	.393E-01	.337E-01	.164E-01

DATE	TIME	FILE #	Ts C	Tair C	RH %	U M/S	Extinction (Km^-1)	
							4880	3.250
								10.59
8/28/78	09:00	96	13.6	12.4	95.0	5.8	.409E-01	.263E-01
8/28/78	10:23	97	13.6	12.5	93.0	5.6	.770E-01	.397E-01
8/28/78	10:43	98	13.6	12.6	93.0	5.5	.840E-01	.381E-01
8/28/78	11:01	99	13.6	12.8	91.0	7.7	.947E-01	.363E-01
8/28/78	12:20	100	13.6	13.3	88.0	7.7	.948E-01	.360E-01
8/28/78	12:40	101	13.6	13.4	87.0	7.2	.845E-01	.361E-01
8/28/78	13:00	102	13.6	13.4	85.0	7.8	.890E-01	.362E-01
8/28/78	13:06	103	13.6	13.5	86.0	8.4	.113E+00	.527E-01
8/28/78	15:15	104	13.6	13.7	83.0	7.3	.174E+00	.405E-01
8/28/78	15:35	105	13.6	13.9	80.0	7.5	.187E+00	.469E-01
8/28/78	15:53	106	13.6	14	78.0	7.4	.190E+00	.336E-01
8/28/78	17:17	107	13.4	13.2	88.0	8.8	.211E+00	.601E-01
8/28/78	17:37	108	13.4	13.1	88.0	7.7	.212E+00	.572E-01
8/28/78	17:57	109	13.4	13.1	89.0	7.1	.248E+00	.656E-01
8/28/78	18:00	110	13.4	13.1	90.0	7.0	.226E+00	.607E-01
8/28/78	19:07	111	13.4	13.1	89.0	12.1	.354E+00	.547E-01
8/28/78	19:27	112	13.4	13.1	91.0	6.2	.337E+00	.656E-01
8/28/78	19:47	113	13.4	13.1	92.0	6.1	.321E+00	.666E-01
8/28/78	20:07	114	13.4	13.1	95.0	6.3	.290E+00	.746E-01
8/28/78	21:47	119	13.4	13.0	90.0	7.8	.341E+00	.806E-01
8/28/78	22:07	120	13.4	12.9	88.0	8.4	.315E+00	.823E-01
8/28/78	23:27	124	13.4	12.9	94.0	8.8	.103E+01	.292E+00
								.115E+00

DATE	TIME	FILE	TS C	Tour C	RH %	U M/S	Extinction (Km^-1) 3.750	4880	10.59
8/28/78	23:47	125	13.4	12.9	93.0	7.5	.424E+00	.116E+01	.220E+00
8/29/78	00:07	126	13.4	12.9	94.0	6.6	.229E+00	.757E+00	.379E-01
8/29/78	01:07	129	13.4	12.8	93.0	10.7	.623E+00	.166E+01	.194E+00
8/29/78	01:27	130	13.4	12.7	93.0	7.4	.136E+00	.501E+00	.621E-01
8/29/78	01:47	131	13.4	12.7	93.0	6.7	.108E+00	.379E+00	.462E-01
8/29/78	02:07	132	13.4	12.6	94.0	8.9	.731E-01	.300E+00	.228E-01
8/29/78	02:27	133	13.4	12.6	94.0	14.9	.609E-01	.209E+00	.218E-01
8/29/78	02:47	134	13.4	12.7	94.0	15.0	.690E-01	.269E+00	.268E-01
8/29/78	03:07	135	13.4	12.7	94.0	15.0	.789E-01	.414E+00	.222E-01
8/29/78	03:27	136	13.4	12.7	94.0	15.6	.898E-01	.507E+00	.206E-01
8/29/78	03:47	137	13.4	12.6	94.0	14.6	.456E-01	.372E+00	.123E-01
8/29/78	04:27	139	13.4	12.6	92.0	7.0	.460E-01	.357E+00	.162E-01
8/29/78	04:47	140	13.4	12.6	93.0	8.1	.723E-01	.488E+00	.243E-01
8/29/78	05:07	141	13.4	12.6	94.0	13.9	.737E-01	.536E+00	.244E-01
8/29/78	05:27	142	13.4	12.5	94.0	13.3	.491E-01	.404E+00	.150E-01
8/29/78	06:07	144	13.4	12.5	92.0	5.5	.439E-01	.311E+00	.112E-01
8/29/78	06:27	145	13.4	12.3	91.0	5.4	.447E-01	.282E+00	.109E-01
8/29/78	06:47	146	13.4	12.4	90.0	9.8	.336E-01	.266E+00	.837E-02
8/29/78	07:16	148	13.4	12.5	90.0	12.2	.365E-01	.304E+00	.901E-02
8/29/78	07:56	149	13.4	12.7	90.0	3.7	.430E-01	.258E+00	.104E-01
8/29/78	08:16	150	13.4	12.3	91.0	2.8	.504E-01	.306E+00	.127E-01
8/29/78	08:26	151	13.4	12.8	92.0	3.3	.524E-01	.312E+00	.133E-01

DATE	TIME	FILE #	T _g C.	Tair C.	KU %	U M/S	Extinction (Km^-1) 3.750	Extinction (Km^-1) 10.59
8/29/78	10:13	152	13.4	12.5	95.0	2.6	.100E+01	.540E-01
8/29/78	10:33	153	13.4	12.5	95.0	2.3	.934E+00	.493E-01
9/ 4/78	10:58	161	13.1	12.9	98.0	9.5	.108E+02	.617E+01
9/ 4/78	19:18	162	13.1	12.9	98.0	9.4	.106E+02	.670E+01
9/ 4/78	19:38	163	13.1	12.8	98.0	8.2	.106E+02	.668E+01
9/ 5/78	12:56	165	12.9	12.5	92.0	8.3	.391E-01	.776E-02
9/ 5/78	13:16	167	12.9	12.8	81.0	8.3	.517E-01	.131E-01
9/ 5/78	13:30	168	12.9	12.9	81.0	8.7	.502E-01	.115E-01
9/ 5/78	14:45	169	12.9	13.3	78.0	7.9	.456E-01	.111E-01
9/ 5/78	15:05	170	12.9	13.4	78.0	8.3	.503E-01	.146E-01
9/ 5/78	15:17	171	12.9	13.4	76.0	9.8	.462E-01	.111E-01
9/ 5/78	15:29	172	12.9	13.2	76.0	16.0	.568E-01	.144E-01
9/ 5/78	16:42	173	12.9	12.4	82.0	9.9	.487E-01	.157E-01
9/ 5/78	17:02	174	12.9	12.4	83.0	9.8	.583E-01	.184E-01
9/ 5/78	17:09	175	12.9	12.3	85.0	10.1	.574E-01	.206E-01
9/ 5/78	18:53	176	12.9	11.9	89.0	11.1	.913E-01	.375E-01
9/ 5/78	19:13	177	12.9	11.9	90.0	10.9	.111E+00	.509E-01
9/ 5/78	19:22	178	12.9	11.9	90.0	12.6	.700E-01	.212E-01
9/ 5/78	21:01	179	12.8	11.8	86.0	12.1	.892E-01	.394E-01
9/ 5/78	21:17	180	12.8	11.9	86.0	13.2	.844E-01	.349E-01
9/ 5/78	22:44	181	12.8	12.5	85.0	11.7	.108E+00	.440E-01
9/ 5/78	23:03	182	12.8	12.4	86.0	12.4	.134E+00	.592E-01

DATE	TIME	FILE #	fs C	year C	RH %	U M/S	.4800	Extinction (Km^-1) 3.250	10.59
9/ 5/78	23:53	183	12.8	12.0	92.0	20.0	.324E+00	.267E+00	.147E+00
9/ 5/78	00:13	184	12.8	11.9	89.0	20.3	.330E+00	.250E+00	.145E+00
9/ 5/78	00:33	185	12.8	11.9	87.0	18.6	.303E+00	.237E+00	.124E+00
9/ 5/78	00:41	186	12.8	11.8	86.0	17.3	.276E+00	.205E+00	.111E+00
9/ 5/78	01:29	187	12.6	11.8	85.0	15.9	.210E+00	.147E+00	.736E-01
9/ 5/78	01:49	188	12.5	11.8	85.0	16.4	.239E+00	.183E+00	.915E-01
9/ 5/78	02:09	189	12.5	11.7	85.0	16.9	.241E+00	.174E+00	.903E-01
9/ 5/78	03:01	190	12.6	11.6	83.0	13.7	.209E+00	.144E+00	.744E-01
9/ 5/78	03:18	191	12.6	11.6	83.0	13.6	.248E+00	.182E+00	.991E-01
9/ 5/78	03:59	192	12.6	11.6	83.0	13.9	.243E+00	.175E+00	.919E-01
9/ 5/78	04:19	193	12.6	11.6	82.0	13.9	.250E+00	.185E+00	.105E+00
9/ 5/78	04:39	194	12.6	11.6	82.0	13.7	.254E+00	.196E+00	.112E+00
9/ 5/78	04:59	195	12.6	11.6	83.0	14.1	.258E+00	.176E+00	.111E+00
9/ 5/78	05:19	196	12.6	11.4	83.0	15.6	.249E+00	.193E+00	.108E+00
9/ 5/78	05:39	197	12.6	11.4	83.0	15.4	.239E+00	.186E+00	.993E-01
9/ 5/78	05:59	198	12.6	11.4	82.0	14.0	.220E+00	.168E+00	.957E-01
9/ 5/78	06:19	199	12.6	11.4	82.0	13.8	.223E+00	.175E+00	.948E-01
9/ 5/78	06:39	200	12.6	11.5	81.0	13.7	.244E+00	.191E+00	.114E+00
9/ 5/78	06:59	201	12.6	11.4	81.0	13.5	.212E+00	.174E+00	.961E-01
9/ 5/78	07:19	202	12.6	11.4	82.0	13.4	.230E+00	.186E+00	.108E+00
9/ 5/78	07:39	203	12.6	11.4	81.0	13.6	.223E+00	.181E+00	.105E+00
9/ 5/78	07:59	204	12.6	11.3	79.0	14.6	.203E+00	.163E+00	.961E-01

DATE	TIME	FILE	Ts	Tair	RH	U	Extinction (Km^-1)	
			C	C	%	M/S	4980	3.750 10.59
9/ 5/78	08:19	205	12.6	11.4	78.0	14.6	.205E+00	.160E+00 .986E-01
9/ 5/78	08:39	206	12.6	11.9	77.0	13.9	.209E+00	.161E+00 .965E-01
9/ 5/78	08:59	207	12.6	11.5	76.0	14.1	.217E+00	.172E+00 .105E+00
9/ 6/78	00:22	209	12.4	11.7	85.0	8.3	.928E-01	.560E-01 .222E-01
9/ 6/78	02:04	210	12.4	11.6	86.0	8.1	.100E+00	.740E-01 .289E-01
9/ 6/78	02:22	211	12.4	11.4	87.0	8.1	.927E-01	.676E-01 .274E-01
9/ 6/78	05:04	212	12.6	11.3	93.0	8.7	.152E+00	.134E+00 .551E-01
9/ 6/78	05:24	213	12.6	11.3	92.0	8.5	.155E+00	.129E+00 .468E-01
9/ 6/78	07:20	214	12.6	11.7	70.0	8.6	.195E+00	.114E+00 .401E-01
9/ 6/78	07:40	215	12.6	11.7	90.0	8.5	.178E+00	.977E-01 .308E-01
9/ 6/78	09:13	216	12.6	11.9	92.0	7.6	.210E+00	.109E+00 .361E-01
9/ 6/78	09:33	217	12.6	12.0	92.0	7.7	.189E+00	.994E-01 .347E-01
9/ 6/78	09:44	218	12.6	12.1	91.0	7.3	.174E+00	.951E-01 .312E-01
9/ 6/78	11:16	219	12.6	12.1	91.0	9.2	.271E+00	.226E+00 .128E+00
9/ 6/78	11:30	220	12.6	12.2	94.0	9.3	.217E+00	.184E+00 .735E-01
9/ 6/78	13:34	221	12.6	11.9	88.0	10.4	.511E-01	.363E-01 .140E-01
9/ 6/78	13:54	222	12.6	12.1	80.0	9.9	.401E-01	.347E-01 .109E-01
9/ 7/78	13:00	223	12.6	12.4	79.0	9.4	.438E-01	.395E-01 .170E-01
9/ 7/78	16:07	224	12.6	12.4	82.0	6.2	.456E-01	.407E-01 .111E-01
9/ 7/78	16:27	225	12.6	12.4	82.0	6.4	.456E-01	.415E-01 .101E-01
9/ 7/78	16:37	226	12.6	12.4	84.0	7.1	.573E-01	.496E-01 .147E-01
9/ 7/78	17:04	227	12.6	12.1	85.0	8.0	.697E-01	.604E-01 .155E-01

DATE	TIME	FILE #	Ts C	Tair C	RH %	U M/S	Extinction (Km ⁻¹)		
							.4880	.3.750	.10.52
9/ 7/78	19:14	228	12.6	12.1	85.0	7.8	.620E-01	.575E-01	.141E-01
9/ 7/78	21:27	229	12.4	11.7	87.0	7.9	.948E-01	.718E-01	.367E-01
9/ 7/78	23:21	231	12.4	11.7	87.0	7.9	.109E+00	.647E-01	.216E-01
9/ 7/78	23:41	232	12.5	11.8	89.0	9.2	.199E+00	.729E-01	.256E-01
9/ 8/78	00:26	233	12.7	11.8	92.0	14.0	.387E+00	.764E-01	.334E-01
9/ 8/78	00:46	234	12.7	11.9	93.0	13.9	.346E+00	.727E-01	.345E-01
9/ 8/78	01:26	235	12.6	11.9	90.0	7.9	.358E+00	.150E+00	.991E-01
9/ 8/78	01:46	236	12.6	11.8	91.0	7.7	.484E+00	.197E+00	.133E+00
9/ 8/78	01:53	237	12.6	11.8	91.0	8.4	.398E+00	.132E+00	.705E-01
9/ 8/78	03:28	238	12.5	11.5	94.0	8.0	.379E+00	.164E+00	.954E-01
9/ 8/78	03:48	239	12.5	11.3	93.0	8.1	.216E+00	.114E+00	.591E-01
9/ 8/78	08:37	241	12.5	12.1	99.0	7.6	.805E+00	.495E+00	.307E+00
9/ 8/78	08:44	242	12.5	12.1	98.0	8.0	.597E+00	.333E+00	.197E+00
9/ 8/78	10:46	244	12.7	12.3	97.0	5.0	.195E+00	.136E+00	.514E-01
9/ 8/78	11:32	245	12.7	11.9	99.0	11.1	.613E-01	.420E-01	.176E-01
9/ 8/78	11:47	246	12.7	11.9	98.0	7.6	.495E-01	.415E-01	.158E-01
9/ 8/78	12:07	247	12.7	12.0	96.0	6.2	.619E-01	.591E-01	.231E-01
9/ 8/78	12:26	248	12.7	12.1	97.0	9.5	.165E+00	.166E+00	.792E-01
9/ 8/78	14:38	249	12.7	13.8	82.0	7.2	.242E+00	.194E+00	.720E-01
9/ 8/78	16:34	251	12.8	13.1	86.0	7.1	.183E+00	.150E+00	.479E-01
9/ 8/78	16:41	252	12.9	13.0	88.0	6.0	.181E+00	.157E+00	.478E-01
9/ 8/78	17:06	253	12.9	12.9	90.0	14.9	.258E+00	.206E+00	.707E-01

DATE	TIME	FILE	Ts C	Tair C	RH %	U M/S	Extinction (Km ⁻¹) 3.750	Extinction (Km ⁻¹) 10.52
9/ 8/78	17:26	254	12.9	12.9	90.0	14.7	.296E+00	.945E-01
9/ 8/78	17:40	255	12.9	12.8	91.0	13.8	.297E+00	.876E-01
9/ 8/78	18:18	256	12.8	12.9	87.0	7.4	.251E+00	.748E-01
9/ 8/78	18:30	257	12.8	12.8	89.0	7.2	.261E+00	.783E-01
9/ 8/78	21:52	258	12.8	12.9	95.0	8.2	.360E+00	.272E+00
9/ 8/78	22:12	259	12.8	12.9	96.0	7.8	.386E+00	.115E+00
9/ 8/78	22:32	260	12.8	12.9	96.0	8.1	.430E+00	.150E+00
9/ 8/78	22:40	261	12.8	12.8	96.0	8.5	.351E+00	.108E+00
9/ 8/78	23:34	262	12.8	12.6	94.0	8.3	.476E+00	.228E+00
9/ 8/78	23:54	263	12.8	12.5	93.0	8.2	.724E+00	.409E+00
9/ 9/78	00:14	264	12.8	12.4	94.0	10.1	.693E+00	.377E+00
9/ 9/78	00:34	265	12.8	12.4	93.0	9.2	.470E+00	.220E+00
9/ 9/78	01:53	268	12.8	12.8	97.0	10.6	.878E+00	.515E+00
9/ 9/78	02:13	269	12.8	12.8	98.0	13.4	.642E+00	.312E+00
9/ 9/78	02:33	270	12.8	12.6	98.0	14.7	.111E+01	.619E+00
9/ 9/78	02:44	271	12.8	12.4	98.0	14.8	.583E+00	.309E+00
9/ 9/78	13:01	272	12.8	13.3	86.0	6.9	.198E+00	.385E-01
9/ 9/78	13:21	273	12.8	13.8	85.0	7.1	.206E+00	.405E-01
9/ 9/78	13:35	274	12.8	13.3	88.0	7.5	.227E+00	.448E-01
9/ 9/78	14:40	275	12.8	12.1	88.0	6.5	.121E+00	.357E-01
9/ 9/78	15:00	276	12.8	12.2	92.0	5.4	.157E+00	.537E-01
9/ 9/78	15:20	277	12.8	13.3	89.0	8.5	.195E+00	.461E-01

DATE	TIME	FILE	ts	Tair	RH	U	Extinction (Km^-1)	Extinction (Km^-1)
			C	C	%	M/S	.4880	3.750
9/ 9/78	15:29	278	12.8	13.7	87.0	8.9	.189E+00	.145E+00
9/ 9/78	16:02	280	12.8	13.5	89.0	9.0	.157E+00	.119E+00
9/ 9/78	16:37	281	12.8	12.5	90.0	7.8	.233E+00	.211E+00
9/ 9/78	16:57	282	12.8	12.5	90.0	6.5	.213E+00	.188E+00
9/ 9/78	17:15	283	12.8	12.6	92.0	9.2	.179E+00	.133E+00
9/ 9/78	18:30	284	12.8	12.3	91.0	6.9	.140E+00	.119E+00
9/ 9/78	19:04	286	12.8	12.6	91.0	6.9	.176E+00	.137E+00
9/ 9/78	19:19	287	12.8	12.5	92.0	8.1	.194E+00	.154E+00
9/ 9/78	20:01	288	12.8	12.0	92.0	15.9	.125E+00	.968E-01
9/ 9/78	20:21	289	12.8	12.1	92.0	15.8	.135E+00	.119E+00
9/ 9/78	20:41	290	12.8	12.2	92.0	15.7	.108E+00	.765E-01
9/ 9/78	21:01	291	12.8	12.0	87.0	8.7	.689E-01	.635E-01
9/ 9/78	21:08	292	12.8	12.1	90.0	7.8	.114E+00	.107E+00
9/ 9/78	21:53	293	13.0	12.4	91.0	7.7	.126E+00	.108E+00
9/ 9/78	22:07	294	13.0	12.4	92.0	8.6	.132E+00	.104E+00
9/ 9/78	22:29	295	13.0	12.3	93.0	14.5	.124E+00	.926E-01
9/ 9/78	22:49	296	13.0	12.4	93.0	14.4	.124E+00	.928E-01
9/ 9/78	23:09	297	13.0	12.5	91.0	14.7	.121E+00	.940E-01
9/ 9/78	23:15	298	13.0	12.5	90.0	12.9	.131E+00	.921E-01
9/ 9/78	23:55	299	12.9	12.5	87.0	7.3	.114E+00	.935E-01
9/10/78	00:15	300	13.3	12.6	87.0	7.8	.106E+00	.828E-01
9/10/78	02:04	302	13.3	12.2	91.0	8.9	.167E+00	.149E+00

DATE	TIME	FILE #	Ts C	Tair C	RH %	U M/S	Extinction (Kw^-1) 3.750	Extinction (Kw^-1) 10.52
9/10/78	02:17	303	13.3	12.2	92.0	10.1	.100E+00	.782E-01
9/10/78	03:55	304	13.1	12.0	90.0	10.0	.216E+00	.182E+00
9/10/78	04:15	305	13.1	12.1	89.0	9.6	.933E-01	.726E-01
9/10/78	04:19	306	13.1	12.2	89.0	10.4	.834E-01	.702E-01
9/10/78	06:13	307	13.2	12.4	90.0	8.5	.116E+00	.908E-01
9/10/78	06:33	308	13.2	12.3	91.0	9.4	.106E+00	.825E-01
9/10/78	08:17	313	13.2	12.5	87.0	7.4	.698E-01	.599E-01
9/10/78	08:37	314	13.2	12.5	87.0	6.7	.757E-01	.652E-01
9/10/78	11:09	316	13.2	12.5	83.0	6.3	.575E-01	.408E-01
9/10/78	11:29	317	13.2	12.4	84.0	5.6	.606E-01	.456E-01
9/10/78	11:33	318	13.2	12.3	85.0	5.4	.588E-01	.446E-01
9/10/78	13:05	319	13.2	12.2	78.0	4.7	.312E-01	.280E-01
9/10/78	13:25	320	13.2	12.1	77.0	4.5	.277E-01	.245E-01
9/10/78	13:45	321	13.2	12.2	77.0	4.3	.262E-01	.239E-01
9/10/78	16:27	322	13.2	12.1	79.0	6.4	.271E-01	.242E-01
9/10/78	17:45	325	13.2	12.1	87.0	6.2	.507E-01	.476E-01
9/10/78	19:47	326	13.0	11.6	28.0	7.6	.182E+00	.186E+00
9/10/78	20:07	327	13.0	11.6	96.0	11.5	.265E+00	.262E+00
9/10/78	20:27	328	13.0	11.8	97.0	14.3	.191E+00	.190E+00
9/10/78	20:47	329	13.0	12.2	98.0	15.1	.286E+00	.244E+00
9/10/78	21:07	330	13.0	13.0	97.0	8.9	.136E+00	.137E+00
9/10/78	21:27	331	13.0	13.4	97.0	10.4	.203E+00	.145E+00

DATE	TIME	FILE	IS	FOIR	KH	U	Extinction (Km^-1)
			°C	°C	%	M/S	
9/10/78	21:47	332	13.0	13.4	96.0	10.6	.305E+00 .557E-01
9/10/78	21:54	333	13.0	13.5	96.0	10.1	.346E+00 .641E-01
10/10/78	00:32	334	13.0	13.4	89.0	12.0	.493E+00 .120E+00
10/10/78	00:52	335	13.0	13.4	89.0	12.4	.492E+00 .122E+01
10/10/78	02:53	336	13.2	12.9	91.0	11.5	.207E+00 .751E-01
10/10/78	03:13	337	13.2	12.9	91.0	10.4	.235E+00 .802E-01
9/10/78	04:51	341	13.2	12.9	93.0	9.2	.224E+00 .901E-01
9/10/78	05:11	342	13.2	12.7	92.0	10.8	.183E+00 .674E-01
9/10/78	05:17	343	13.2	12.8	93.0	10.6	.240E+00 .107E+00
9/10/78	05:39	344	13.2	12.8	94.0	15.4	.281E+00 .113E+00
9/10/78	05:59	345	13.2	12.7	92.0	16.1	.221E+00 .877E-01
9/10/78	06:19	346	13.2	12.8	91.0	16.3	.305E+00 .136E+00
9/10/78	06:39	347	13.2	12.6	94.0	13.3	.467E+00 .235E+00
9/10/78	06:59	348	13.2	12.2	95.0	7.5	.116E+00 .355E-01
9/10/78	07:19	349	13.2	12.1	96.0	6.0	.130E+00 .387E-01
9/10/78	07:59	351	13.2	11.3	97.0	9.9	.859E-01 .448E-01
9/10/78	08:19	352	13.2	11.1	97.0	11.5	.384E-01 .158E-01
9/10/78	08:39	353	13.2	11.0	96.0	12.1	.369E-01 .168E-01
9/10/78	08:59	354	13.2	11.1	95.0	5.9	.323E-01 .138E-01
9/10/78	10:39	359	13.2	11.5	93.0	9.1	.327E-01 .905E-02
9/10/78	11:39	362	13.2	11.5	97.0	2.8	.337E-01 .639E-02
9/10/78	12:19	364	13.2	11.6	97.0	1.8	.479E-01 .111E-01

DATE	TIME	FILE #	TS C	Tair C	RH %	U M/S	Extinction (Km^-1) 3.750	Extinction (Km^-1) 4.800	Extinction (Km^-1) 10.59
9/10/78	13:37	368	13.2	12.4	96.0	12.3	.625E-01	.646E-01	.164E-01
9/10/78	14:21	369	13.2	12.5	95.0	13.4	.151E+00	.148E+00	.904E-01
9/10/78	14:41	370	13.2	12.4	97.0	13.7	.912E-01	.928E-01	.323E-01
9/10/78	15:01	371	13.2	12.3	97.0	14.2	.195E+00	.196E+00	.104E+00
9/10/78	15:21	372	13.2	12.2	98.0	14.9	.137E+00	.192E+00	.105E+00
9/10/78	15:41	373	13.2	12.2	98.0	15.4	.148E+00	.161E+00	.799E-01
9/10/78	16:01	374	13.2	12.5	96.0	13.3	.115E+00	.133E+00	.419E-01
9/10/78	16:21	375	13.2	12.6	92.0	14.2	.994E-01	.123E+00	.343E-01
9/10/78	16:41	376	13.2	12.8	91.0	14.2	.113E+00	.144E+00	.402E-01
9/10/78	17:01	377	13.2	12.8	91.0	13.9	.102E+00	.138E+00	.338E-01
9/10/78	17:14	378	13.2	12.9	91.0	14.7	.198E+00	.230E+00	.112E+00
9/10/78	18:17	379	13.3	12.5	94.0	15.7	.129E+00	.181E+00	.497E-01
9/10/78	18:37	380	13.3	12.5	92.0	16.0	.104E+00	.135E+00	.509E-01

DATE	TIME	FILE	Ts C	Tair C	RH %	U M/S	Extinction (Km^-1) 4880	Extinction (Km^-1) 3.750	Extinction (Km^-1) 10.59
9/10/78	18:57	1	13.3	12.5	93.0	15.2	.138E+00	.108E+00	.458E-01
9/10/78	19:17	2	13.3	12.5	90.0	16.0	.124E+00	.932E-01	.426E-01
9/10/78	19:37	3	13.3	12.6	88.0	16.1	.161E+00	.121E+00	.550E-01
9/10/78	19:57	4	13.3	12.4	89.0	16.5	.141E+00	.111E+00	.590E-01
9/10/78	20:17	5	13.3	12.4	89.0	16.6	.169E+00	.138E+00	.806E-01
9/10/78	20:37	6	13.3	12.3	90.0	15.7	.170E+00	.132E+00	.693E-01
9/10/78	20:57	7	13.3	12.2	93.0	16.4	.104E+01	.628E+00	.526E+00
9/10/78	21:15	8	13.4	12.1	94.0	17.4	.303E+00	.211E+00	.126E+00
9/10/78	22:07	9	13.7	12.1	91.0	19.3	.268E+00	.206E+00	.108E+00
9/10/78	22:27	10	13.7	12.3	87.0	18.8	.224E+00	.165E+00	.816E-01
9/10/78	22:47	11	13.7	12.6	85.0	18.3	.258E+00	.192E+00	.110E+00
9/10/78	23:07	12	13.7	12.5	87.0	17.0	.199E+00	.149E+00	.778E-01
9/10/78	23:27	13	13.7	12.4	90.0	16.8	.152E+00	.112E+00	.491E-01
9/10/78	23:47	14	13.7	12.4	91.0	16.8	.175E+00	.126E+00	.486E-01
9/11/78	00:07	15	13.7	12.5	90.0	16.7	.177E+00	.117E+00	.386E-01
9/11/78	00:27	16	13.7	12.6	89.0	16.8	.183E+00	.116E+00	.321E-01
9/11/78	00:47	17	13.7	12.5	87.0	17.2	.172E+00	.107E+00	.274E-01
9/11/78	01:27	19	13.7	12.2	91.0	14.9	.111E+00	.724E-01	.173E-01
9/11/78	03:51	21	13.2	10.9	89.0	17.8	.146E+01	.754E+00	.657E+00
9/11/78	08:05	22	13.2	12.1	77.0	13.6	.173E+00	.131E+00	.844E-01
9/11/78	08:25	23	13.2	12.3	75.0	14.1	.170E+00	.128E+00	.835E-01

DATE	TIME	FILE #	Ts C	Tair C	RH %	U M/S	Extinction (Km^-1) 3.750	Extinction (Km^-1) 10.52
9/11/78	08:45	24	13.2	12.3	72.0	14.2	.152E+00	.798E-01
9/11/78	09:28	25	13.2	12.2	73.0	12.5	.206E+00	.113E+01
9/11/78	09:48	26	13.2	12.0	73.0	13.3	.102E+00	.489E-01
9/11/78	10:08	27	13.2	11.6	76.0	12.9	.141E+00	.769E-01
9/11/78	16:28	28	13.2	11.8	75.0	11.7	.873E-01	.420E-01
9/11/78	10:48	29	13.2	11.9	74.0	12.5	.114E+00	.594E-01
9/11/78	11:08	30	13.2	11.6	75.0	11.5	.140E+00	.757E-01
9/11/78	11:28	31	13.2	11.4	77.0	10.3	.137E+00	.731E-01
9/11/78	11:48	32	13.2	11.9	74.0	10.6	.900E-01	.421E-01
9/11/78	12:08	33	13.2	12.3	70.0	11.0	.799E-01	.347E-01
9/11/78	12:28	34	13.2	12.0	76.0	10.1	.881E-01	.377E-01
9/11/78	12:48	35	13.2	12.0	72.0	10.4	.770E-01	.323E-01
9/11/78	13:08	36	13.2	11.9	73.0	10.9	.592E-01	.243E-01
9/11/78	13:28	37	13.2	11.9	75.0	10.2	.662E-01	.272E-01
9/11/78	13:48	38	13.2	11.8	75.0	9.8	.457E-01	.193E-01
9/11/78	14:35	39	13.2	12.3	70.0	9.3	.483E-01	.169E-01
9/11/78	14:55	40	13.2	12.5	66.0	9.3	.398E-01	.123E-01
9/11/78	15:15	41	13.2	12.6	66.0	9.1	.384E-01	.122E-01
9/11/78	17:58	43	13.2	12.7	61.0	5.9	.473E-01	.121E-01
9/11/78	18:04	44	13.2	12.8	62.0	5.7	.531E-01	.155E-01
9/11/78	19:42	45	13.2	12.3	67.0	5.1	.604E-01	.148E-01
9/11/78	19:54	46	13.5	12.3	68.0	5.0	.624E-01	.167E-01

DATE	TIME	FILE	Is	Tair	RH	U	Extinction (Km ⁻¹)
			C	C	%	M/S	
9/11/78	21:48	47	13.4	12.2	70.0	5.3	.476E-01
9/11/78	22:08	48	13.4	12.2	66.0	5.8	.371E-01
9/11/78	22:25	49	13.4	12.2	69.0	5.4	.499E-01
9/12/78	03:46	53	13.7	12.3	70.0	6.2	.458E-01
9/12/78	06:45	61	13.7	11.7	90.0	12.2	.566E-01
9/12/78	07:25	63	13.8	12.0	92.0	13.1	.173E+00
9/12/78	07:45	64	13.7	12.1	92.0	12.6	.256E+00
9/12/78	08:05	65	13.7	12.4	93.0	13.3	.367E+00
9/12/78	08:25	66	13.7	12.4	94.0	14.7	.164E+01
9/12/78	08:45	67	13.7	12.5	94.0	13.8	.134E+01
9/12/78	09:05	68	13.7	12.6	95.0	14.9	.764E+00
9/12/78	12:33	71	13.7	13.7	94.0	11.1	.554E+00
9/12/78	12:48	72	13.7	13.7	94.0	9.9	.620E+00
9/12/78	14:26	73	13.7	13.4	94.0	8.9	.486E+00
9/12/78	14:30	74	13.7	13.4	95.0	9.2	.240E+00
9/12/78	17:33	75	13.7	12.8	92.0	8.6	.174E+00
9/12/78	17:45	76	13.7	12.3	90.0	9.0	.124E+00
9/12/78	20:04	77	13.9	13.3	89.0	10.1	.130E+00
9/12/78	20:09	78	14.0	13.3	88.0	9.5	.120E+00
9/12/78	22:39	79	13.9	13.2	85.0	9.7	.115E+00
9/12/78	22:59	80	13.9	13.3	85.0	8.9	.128E+00
9/13/78	01:07	81	13.9	13.4	87.0	9.2	.166E+00

DATE	TIME	FILE #	Ts C	Tair C	RH %	U m/s	Extinction (Km ⁻¹)		
							4980	3.750	10.59
9/13/78	01:25	82	13.9	13.3	89.0	9.5	.217E+00	.176E+00	.640E-01
9/13/78	08:43	87	13.9	13.3	84.0	11.0	.290E+00	.213E+00	.838E-01
9/13/78	09:05	88	13.9	13.3	82.0	16.0	.291E+00	.201E+00	.828E-01
9/13/78	09:23	89	13.9	13.4	83.0	18.0	.330E+00	.237E+00	.101E+00
9/13/78	09:43	90	13.9	13.4	85.0	18.9	.372E+00	.268E+00	.115E+00
9/13/78	10:03	91	13.9	12.9	86.0	19.6	.848E+00	.564E+00	.418E+00
9/13/78	10:23	92	13.9	14.8	70.0	19.7	.191E+00	.131E+00	.613E-01
9/13/78	10:43	93	13.9	13.5	75.0	19.2	.207E+00	.147E+00	.681E-01
9/13/78	11:03	94	13.9	13.9	72.0	18.8	.203E+00	.134E+00	.523E-01
9/13/78	11:23	95	13.9	14.1	69.0	19.1	.220E+00	.155E+00	.625E-01
9/13/78	11:43	96	13.9	14.0	71.0	19.4	.263E+00	.187E+00	.863E-01
9/13/78	12:03	97	13.9	13.8	77.0	19.2	.278E+00	.206E+00	.103E+00
9/13/78	12:23	98	13.9	13.6	77.0	18.3	.246E+00	.167E+00	.682E-01
9/13/78	12:43	99	13.9	13.1	76.0	20.1	.103E+01	.812E+00	.611E+00
9/13/78	13:03	100	13.9	12.1	82.0	17.4	.214E+00	.167E+00	.775E-01
9/13/78	13:23	101	13.9	13.1	80.0	18.2	.266E+00	.189E+00	.948E-01
9/13/78	13:43	102	13.9	13.9	70.0	20.1	.217E+00	.149E+00	.839E-01
9/13/78	14:03	103	13.9	14.0	70.0	18.7	.234E+00	.170E+00	.909E-01
9/13/78	14:23	104	13.9	14.1	68.0	16.2	.213E+00	.148E+00	.809E-01
9/13/78	14:30	105	13.9	14.2	70.0	18.5	.204E+00	.140E+00	.745E-01
9/13/78	15:19	106	13.5	13.7	73.0	21.0	.709E+00	.499E+00	.362E+00
9/13/78	15:39	107	13.5	12.4	81.0	19.7	.602E+00	.435E+00	.317E+00

DATE	TIME	FILE #	Ts C	Tair C	RH %	U N/S	Extinction (Kw^-1) 3.750	Extinction (Kw^-1) 10.59
9/13/78	15:59	108	13.5	13.3	78.0	20.1	.242E+00	.179E+00
9/13/78	16:05	109	13.5	13.5	72.0	22.0	.178E+00	.113E+00
9/13/78	16:25	110	13.5	13.5	71.0	19.7	.361E+00	.320E+00
9/13/78	16:48	111	13.5	13.9	73.0	14.3	.236E+00	.180E+00
9/13/78	17:00	112	13.5	13.6	75.0	14.0	.226E+00	.165E+00
9/13/78	17:28	113	13.5	13.3	78.0	14.2	.250E+00	.184E+00
9/13/78	17:33	114	13.5	13.2	78.0	14.6	.175E+00	.129E+00
9/13/78	18:38	115	13.5	13.0	79.0	12.8	.247E+00	.194E+00
9/13/78	18:58	116	13.5	13.1	78.0	13.3	.266E+00	.195E+00
9/13/78	19:18	117	13.5	12.9	79.0	13.7	.286E+00	.203E+00
9/13/78	19:38	118	13.5	13.0	76.0	13.1	.242E+00	.180E+00
9/13/78	19:58	119	13.5	13.0	78.0	13.5	.239E+00	.178E+00
9/13/78	20:18	120	13.5	12.9	79.0	13.3	.262E+00	.192E+00
9/13/78	20:38	121	13.6	13.0	77.0	13.7	.230E+00	.163E+00
9/13/78	20:58	122	13.7	13.1	77.0	13.3	.228E+00	.165E+00
9/13/78	21:13	123	13.7	13.0	79.0	14.3	.256E+00	.185E+00
9/13/78	21:55	124	13.7	13.0	77.0	13.7	.232E+00	.171E+00
9/13/78	22:15	125	13.7	13.1	76.0	14.4	.242E+00	.169E+00
9/13/78	22:35	126	13.7	13.1	78.0	13.9	.241E+00	.169E+00
9/13/78	22:55	127	13.7	13.0	78.0	14.9	.226E+00	.157E+00
9/13/78	23:15	128	13.7	13.1	77.0	14.4	.211E+00	.150E+00
9/13/78	23:27	129	13.7	13.0	78.0	15.0	.547E+00	.354E+00

DATE	TIME	FILE	Ts C	Tair C	RH %	U m/s	Extinction (Km^-1) 3.750	Extinction (Km^-1) 10.59
9/14/78	11:01	136	13.6	11.8	71.0	12.5	.891E-01	.542E-01
9/14/78	11:21	137	13.6	12.4	68.0	10.9	.166E+00	.128E+00
9/14/78	14:01	145	13.6	12.6	66.0	11.0	.905E-01	.661E-01
9/14/78	01:49	153	12.5	12.8	95.0	23.6	.233E+01	.168E+01
9/14/78	02:07	154	12.5	12.5	96.0	23.9	.391E+01	.320E+01
9/14/78	13:59	178	13.5	13.3	67.0	18.1	.535E-01	.311E-01
9/14/78	14:19	179	13.5	13.2	71.0	17.4	.857E-01	.599E-01
9/14/78	14:39	180	13.5	13.2	81.0	16.3	.136E+00	.999E-01
9/14/78	14:59	181	13.5	13.3	81.0	16.4	.131E+00	.714E-01
9/14/78	15:19	182	13.5	13.3	81.0	16.8	.179E+00	.855E-01
9/14/78	15:27	183	13.5	13.5	77.0	17.8	.167E+00	.715E-01
9/14/78	19:13	184	13.5	13.2	86.0	15.0	.159E+00	.118E+00
9/14/78	19:33	185	13.5	13.3	87.0	14.6	.163E+00	.128E+00
9/14/78	19:53	186	13.5	13.8	87.0	15.3	.742E-01	.450E-01
9/14/78	20:09	187	13.5	14.2	88.0	14.9	.367E-01	.238E-01

APPENDIX B

Meteorological and Aerosol Extinction
Data from CEWCOM-78. The Time is PDT.

DATE	TIME	FILE #	T _g °C	T _{off} °C	RH %	U m/s	Extinction (K _m ⁻¹)	Extinction (K _m ⁻¹)
							4490	3.250
5/11/78	18:10	1	16.0	14.6	81.7	7.3	.117E+00	.737E-01
5/11/78	18:30	2	16.0	14.6	81.7	7.3	.117E+00	.750E-01
5/11/78	18:50	3	16.0	14.6	81.7	7.3	.108E+00	.651E-01
5/11/78	19:10	4	16.0	14.6	81.7	7.3	.111E+00	.670E-01
5/11/78	19:30	5	16.0	14.6	81.7	7.3	.110E+00	.691E-01
5/11/78	19:50	6	14.0	14.2	83.4	5.8	.107E+00	.586E-01
5/11/78	20:10	7	14.0	14.2	83.4	5.8	.715E-01	.462E-01
5/11/78	20:30	8	14.0	14.2	83.4	5.8	.926E-01	.412E-01
5/11/78	20:50	9	14.3	14.5	85.1	7.3	.104E+00	.491E-01
5/11/78	21:10	10	14.3	14.5	85.1	7.3	.919E-01	.346E-01
5/11/78	21:30	11	14.3	14.5	85.1	7.3	.707E-01	.397E-01
5/11/78	21:50	12	14.6	14.9	82.5	8.8	.874E-01	.328E-01
5/11/78	22:10	13	14.6	14.9	82.5	8.8	.890E-01	.312E-01
5/11/78	22:30	14	14.6	14.9	82.5	8.8	.755E-01	.354E-01
5/12/78	02:50	27	15.5	15.3	87.7	2.2	.127E+00	.804E-01
5/12/78	03:10	28	15.5	15.3	87.7	2.2	.122E+00	.751E-01
5/12/78	03:30	29	15.5	15.3	87.7	2.2	.105E+00	.663E-01
5/12/78	03:50	30	17.0	16.6	79.9	1.7	.797E-01	.444E-01
5/12/78	04:10	31	17.0	16.6	79.9	1.7	.954E-01	.586E-01
5/12/78	04:30	32	17.0	16.6	79.9	1.7	.102E+00	.643E-01
5/12/78	08:44	33	17.6	17.0	82.5	4.5	.944E-01	.393E-01

DATE	TIME	FILT	Ts C	Tair C	RH %	U M/S	Extinction (KM^-1)	
							3.750	10.59
5/12/78	07:04	34	17.6	17.0	82.5	4.5	.119E+00	.707E-02
5/12/78	07:24	35	17.6	17.0	82.5	4.5	.104E+00	.839E-02
5/12/78	07:44	36	18.2	17.1	82.9	.3	.112E+00	.934E-02
5/12/78	10:04	37	19.2	17.1	82.9	.3	.125E+00	.783E-02
5/12/78	10:24	38	18.2	17.1	82.9	.3	.144E+00	.858E-02
5/12/78	10:44	39	17.8	17.5	82.5	4.3	.137E+00	.702E-02
5/12/78	11:04	40	17.8	17.5	82.5	4.3	.128E+00	.396E-02
5/12/78	11:24	41	17.8	17.5	82.5	4.3	.126E+00	.579E-02
5/12/78	11:44	42	17.9	18.0	82.3	2.2	.198E+00	.907E-02
5/12/78	12:04	43	17.9	18.0	82.3	2.2	.199E+00	.841E-02
5/12/78	12:24	44	18.0	17.3	82.0	5.9	.186E+00	.686E-02
5/12/78	12:44	45	18.6	18.9	77.1	2.6	.157E+00	.580E-02
5/12/78	13:04	46	18.6	18.9	77.1	2.6	.145E+00	.751E-02
5/12/78	13:24	47	18.6	18.9	77.1	2.6	.149E+00	.630E-02
5/12/78	13:44	48	18.0	18.1	83.0	4.4	.149E+00	.551E-02
5/12/78	14:04	49	18.2	18.8	82.7	4.8	.173E+00	.501E-02
5/12/78	14:24	50	18.2	18.8	82.7	4.8	.166E+00	.476E-02
5/12/78	14:44	51	18.6	18.9	80.8	4.4	.150E+00	.450E-02
5/12/78	15:04	52	18.6	18.9	80.8	4.4	.166E+00	.594E-02
5/12/78	15:24	53	18.5	18.1	77.5	5.5	.165E+00	.577E-02
5/12/78	15:44	54	18.5	18.1	77.5	5.5	.134E+00	.535E-02
5/12/78	16:04	55	18.5	18.1	77.5	6.6	.105E+00	.311E-02

DATE	TIME	FILE	Ts C	Tair C	RH %	U M/S	Extinction (Km ⁻¹) 3.750	Extinction (Km ⁻¹) 10.59
5/12/78	17:44	60	19.1	18.4	84.7	.5	.169E+00	.581E-02
5/12/78	18:04	61	19.1	18.4	84.7	.5	.150E+00	.542E-02
5/12/78	18:24	62	18.2	18.2	84.8	2.9	.148E+00	.610E-02
5/12/78	18:45	63	18.2	18.2	84.3	2.9	.137E+00	.992E-02
5/12/78	19:05	64	18.0	18.2	85.0	3.7	.134E+00	.762E-02
5/12/78	19:25	65	18.5	18.0	87.2	3.6	.140E+00	.850E-02
5/12/78	19:45	66	18.5	18.0	87.2	3.6	.120E+00	.884E-02
5/12/78	20:05	67	19.0	17.7	90.0	3.7	.133E+00	.947E-02
5/12/78	20:25	68	18.7	17.9	90.0	5.1	.127E+00	.959E-02
5/12/78	20:45	69	18.7	17.9	90.0	5.1	.118E+00	.939E-02
5/12/78	21:05	70	18.5	18.7	92.3	3.3	.103E+00	.615E-02
5/12/78	21:25	71	18.5	18.7	92.3	3.3	.898E-01	.579E-02
5/12/78	21:45	72	16.4	18.7	88.7	2.3	.879E-01	.593E-02
5/12/78	22:05	73	16.4	18.7	88.7	2.3	.780E-01	.617E-02
5/12/78	22:25	74	16.4	18.7	88.7	2.3	.699E-01	.540E-02
5/12/78	22:45	75	17.6	18.4	81.4	.4	.653E-01	.528E-02
5/12/78	23:05	76	17.6	18.4	81.4	.4	.701E-01	.625E-02
5/12/78	23:25	77	17.6	18.4	81.4	.4	.508E-01	.425E-02
5/12/78	23:45	78	17.9	18.4	88.1	3.0	.589E-01	.427E-02
5/13/78	00:05	79	17.9	18.4	88.1	3.0	.812E-01	.569E-02
5/13/78	00:25	80	17.9	18.4	88.1	3.0	.122E+00	.955E-02

5/12/78 17:44 60 18.4 18.4 84.7 .5 .169E+00 .581E-02

DATE	TIME	FILL #	Ts °C	Pair °C	RH %	U m/s	Extinction (km ⁻¹)	Extinction (km ⁻¹)
							3.250	10.52
							.4880	
5/13/78	01:05	82	17.3	17.4	93.6	4.5	.125E+00	.572E-01
5/13/78	01:25	83	17.3	17.4	93.6	4.5	.137E+00	.382E-01
5/13/78	01:45	84	18.0	17.1	89.4	3.8	.998E-01	.401E-01
5/13/78	02:05	85	18.0	17.4	89.4	3.8	.945E-01	.430E-01
5/13/78	02:25	86	18.0	17.4	89.4	3.8	.779E-01	.471E-01
5/13/78	02:45	87	17.7	16.8	86.7	2.2	.103E+00	.523E-01
5/13/78	03:05	88	17.7	16.8	86.7	2.2	.920E-01	.500E-01
5/13/78	03:25	89	17.7	16.8	86.7	2.2	.986E-01	.509E-01
5/13/78	03:45	90	17.6	16.4	87.1	1.7	.977E-01	.526E-01
5/13/78	04:05	91	17.6	16.4	87.1	1.7	.112E+00	.582E-01
5/13/78	04:25	92	17.6	16.4	87.1	1.7	.117E+00	.583E-01
5/13/78	04:45	93	14.0	14.7	94.2	2.2	.150E+00	.819E-01
5/13/78	05:05	94	14.0	14.7	94.2	2.2	.172E+00	.953E-01
5/13/78	05:25	95	14.0	14.7	94.2	2.2	.184E+00	.105E+00
5/13/78	05:45	96	13.6	14.1	96.5	.8	.167E+00	.950E-01
5/13/78	06:05	97	13.6	14.1	96.5	.8	.133E+00	.814E-01
5/13/78	06:25	98	13.6	14.1	96.5	.8	.131E+00	.842E-01
5/13/78	06:45	99	14.3	14.6	91.9	.8	.152E+00	.941E-01
5/13/78	07:05	100	14.3	14.6	91.9	.8	.158E+00	.106E+00
5/13/78	07:25	101	14.3	14.6	91.9	.8	.177E+00	.111E+00
5/13/78	07:45	102	14.3	14.6	93.0	.3	.167E+00	.106E+00
5/13/78	08:05	103	14.3	14.6	93.0	.3	.179E+00	.112E+00
								.172E-01

DATE	TIME	FUEL #	Ts °C	Tair °C	RU %	U M/S	Extinction (Kw^-1) 3.750	Extinction (Kw^-1) 10.52
5/13/78	08:25	104	14.3	14.6	93.0	3	.105E+00	.157E-01
5/13/78	17:06	105	14.7	15.7	93.4	1.2	.117E+00	.922E-02
5/13/78	16:20	106	14.2	16.4	89.1	2.1	.124E+00	.109E-01
5/13/78	17:46	107	14.2	16.9	89.1	2.1	.120E+00	.104E-01
5/13/78	20:06	108	14.2	16.4	89.1	2.1	.139E+00	.144E-01
5/13/78	20:26	109	14.9	16.2	93.3	3.0	.138E+00	.101E-01
5/13/78	20:46	110	14.9	16.2	93.3	3.0	.157E+00	.162E-01
5/13/78	21:06	111	14.9	16.2	93.3	3.0	.234E+00	.328E-01
5/13/78	21:26	112	14.9	16.2	93.3	3.0	.241E+00	.416E-01
5/13/78	21:46	113	14.9	16.2	93.3	3.0	.317E+00	.705E-01
5/13/78	23:46	119	14.7	15.3	94.9	2.6	.230E+00	.255E-01
5/14/78	08:46	146	14.4	13.6	99.9	2.8	.335E+01	.215E+01
5/14/78	09:06	147	14.3	13.6	99.9	2.9	.528E+00	.404E+00
5/14/78	09:26	148	14.7	14.0	99.9	2.2	.132E+01	.448E+00
5/14/78	09:46	149	14.6	14.1	97.3	2.8	.137E+01	.771E+00
5/14/78	10:06	150	14.6	13.7	95.3	2.9	.172E+00	.633E-02
5/14/78	10:26	151	14.6	13.7	95.3	2.9	.240E+01	.125E+01
5/14/78	10:46	152	14.8	14.3	94.4	1.9	.229E+00	.798E-02
5/14/78	11:26	154	15.3	13.7	93.4	2.0	.400E+00	.186E-01
5/14/78	11:46	155	15.2	13.6	93.4	2.0	.460E+00	.385E-01
5/14/78	12:26	157	15.1	13.0	93.3	2.3	.221E+00	.120E-01
5/14/78	12:46	158	15.1	13.0	93.3	2.3	.221E+00	.120E-01

DATE	TIME	FILE #	Ts C	Tair C	RH %	U M/S	Extinction (Km ⁻¹) 3/50	Extinction (Km ⁻¹) 10.52
5/14/78	13:06	159	15.2	14.0	91.3	1.8	.221E+00	.383E-01
5/14/78	13:26	160	15.2	14.2	91.0	2.0	.227E+00	.328E-01
5/14/78	14:06	161	15.0	14.3	91.2	2.2	.198E+00	.261E-01
5/14/78	14:26	163	15.0	14.0	90.1	4.3	.163E+00	.210E-01
5/14/78	15:06	165	14.9	14.0	92.4	3.6	.868E+00	.706E+00
5/14/78	15:26	166	15.1	14.6	91.2	2.0	.139E+00	.190E-01
5/14/78	15:46	167	15.1	14.6	91.2	2.0	.118E+00	.167E-01
5/14/78	16:06	168	15.3	15.3	86.2	2.3	.926E-01	.152E-01
5/14/78	16:26	169	15.0	15.7	86.3	2.8	.116E+00	.274E-01
5/14/78	16:46	170	15.0	15.7	86.3	2.8	.141E+00	.305E-01
5/14/78	17:26	172	14.9	15.4	88.5	2.6	.226E+00	.632E-01
5/14/78	17:46	173	14.9	15.4	88.5	2.6	.171E+00	.670E-01
5/14/78	18:06	174	14.9	15.5	89.3	2.3	.156E+00	.709E-01
5/14/78	18:26	175	14.7	15.1	87.5	2.7	.173E+00	.729E-01
5/14/78	19:26	179	14.5	14.3	88.7	4.3	.562E-01	.380E-01
5/14/78	19:46	179	14.5	14.3	88.7	4.3	.611E-01	.429E-01
5/14/78	20:06	180	14.6	14.2	90.5	4.1	.588E-01	.412E-01
5/14/78	20:46	182	14.3	14.2	89.1	4.4	.606E-01	.434E-01
5/14/78	21:26	184	14.4	14.4	87.8	4.2	.577E-01	.383E-01
5/14/78	21:46	185	14.1	14.2	88.8	6.5	.600E-01	.411E-01
5/14/78	22:46	188	14.2	14.4	88.8	7.7	.705E-01	.536E-01
5/14/78	23:06	189	14.1	14.4	87.0	7.6	.694E-01	.481E-01

DATE	TIME	FILE	Ts C	Tair C	RH %	U M/S	4880	Extinction (Km^-1) 3.750	10.59
5/15/78	00:06	192	14.1	14.2	87.4	7.0	.748E-01	.560E-01	.161E-01
5/15/78	00:20	193	14.1	14.2	87.4	7.0	.668E-01	.481E-01	.119E-01
5/15/78	06:46	212	14.6	14.7	78.9	10.3	.540E-01	.402E-01	.144E-01
5/15/78	07:26	214	14.6	14.5	78.4	9.9	.567E-01	.384E-01	.120E-01
5/15/78	07:46	215	14.6	14.7	78.3	8.9	.499E-01	.346E-01	.983E-02
5/15/78	08:26	217	14.7	14.7	83.4	9.8	.674E-01	.404E-01	.108E-01
5/15/78	08:46	218	14.7	14.7	83.4	9.8	.806E-01	.436E-01	.136E-01
5/15/78	09:06	219	14.6	14.7	83.5	10.4	.765E-01	.411E-01	.139E-01
5/15/78	09:26	220	14.6	14.9	83.6	11.3	.817E-01	.386E-01	.166E-01
5/15/78	10:06	222	14.6	14.1	85.3	11.0	.115E+00	.411E-01	.152E-01
5/15/78	11:06	225	14.6	14.3	81.3	10.2	.764E-01	.319E-01	.883E-02
5/15/78	11:26	226	14.6	14.3	81.3	10.2	.713E-01	.343E-01	.100E-01
5/15/78	11:46	227	15.0	14.3	80.4	11.5	.739E-01	.427E-01	.143E-01
5/15/78	12:06	228	15.2	14.3	80.2	11.0	.662E-01	.410E-01	.149E-01
5/15/78	12:26	229	15.2	14.3	80.2	11.0	.638E-01	.391E-01	.132E-01
5/15/78	12:46	230	15.4	14.4	82.7	11.7	.741E-01	.441E-01	.128E-01
5/15/78	13:46	233	15.5	14.4	82.3	13.0	.875E-01	.600E-01	.225E-01
5/15/78	14:46	236	15.7	14.6	78.0	12.3	.117E+00	.709E-01	.249E-01
5/15/78	15:26	238	15.8	14.7	70.6	13.0	.105E+00	.606E-01	.220E-01
5/15/78	15:46	239	15.7	14.9	67.5	13.3	.106E+00	.693E-01	.314E-01
5/15/78	16:26	241	15.7	14.8	67.5	14.3	.112E+00	.707E-01	.282E-01
5/15/78	17:11		15.1	14.1	71.0	14.4	.117E+00	.764E-01	.319E-01

DATE	TIME	FILE	1 σ P	10 σ P	RU %	U m/s	Extinction (K m^{-1}) 3.250	Extinction (K m^{-1}) 10.52
5/15/78	17:26	244	15.7	11.6	63.8	14.8	.127E+00	.470E-01
5/15/78	18:46	248	15.7	14.3	62.8	15.4	.161E+00	.746E-01
5/15/78	17:26	250	14.8	13.9	55.7	16.8	.146E+00	.504E-01
5/18/78	17:23	327	17.2	16.1	77.5	6.8	.120E+00	.149E-01
5/18/78	17:28	328	17.7	16.1	77.5	6.8	.137E+00	.129E-01
5/18/78	17:53	329	16.9	15.7	79.9	5.2	.138E+00	.931E-02
5/18/78	18:13	330	15.9	15.5	81.7	5.5	.120E+00	.100E-01
5/18/78	18:53	332	16.3	15.4	82.2	4.9	.127E+00	.882E-02
5/18/78	19:13	333	16.3	15.4	82.2	4.9	.134E+00	.958E-02
5/18/78	19:53	335	16.0	14.8	87.7	5.6	.154E+00	.336E-01
5/18/78	20:13	336	15.9	14.4	90.5	2.9	.152E+00	.165E-01
5/18/78	20:53	338	15.3	14.3	93.5	2.9	.163E+00	.150E-01
5/18/78	21:13	339	15.3	14.3	93.5	2.5	.171E+00	.141E-01
5/18/78	22:13	342	15.1	14.8	98.0	7.7	.203E+00	.173E-01
5/19/78	10:50	364	15.1	14.8	98.0	7.7	.153E+00	.109E-01
5/19/78	11:50	367	15.2	12.1	95.2	4.7	.190E+00	.109E-01
5/19/78	12:10	368	15.2	12.1	95.2	4.7	.264E+00	.888E-02
5/19/78	12:30	369	15.3	12.2	94.6	4.9	.220E+00	.977E-02
5/19/78	12:50	370	15.3	12.3	93.6	5.3	.227E+00	.141E-01
5/19/78	13:30	372	15.4	12.4	93.1	5.2	.443E+00	.160E-01
5/19/78	13:50	373	15.5	12.5	93.0	5.2	.442E+00	.168E-01
5/19/78	14:10	374	15.5	12.5	93.0	5.2	.403E+00	.131E-01

DATE	TIME	FILE	IN	TAIR	RU	U	Extinction (Km^-1)	
			10	10	%	m/s	3.750	10.52
5/19/76	11:30	375	15.5	12.7	93.0	5.2	.527E+00	.131E-01
5/19/76	11:50	376	15.5	12.7	92.6	5.4	.310E+00	.130E-01
5/19/76	12:19	377	15.5	12.7	92.6	5.4	.307E+00	.257E-01
5/19/76	12:30	378	15.5	12.6	92.7	5.5	.555E+00	.231E-01
5/19/76	12:50	379	15.6	12.6	93.7	5.9	.555E+00	.238E-01
5/19/76	13:10	380	15.6	12.6	93.2	5.7	.454E+00	.221E-01

DATE	TIME	FILE	Ts C	Tair C	RH %	U M/S	.4890	Extinction (Km ⁻¹) 3.750	10.52
5/19/78	16:30	1	15.5	12.5	94.1	6.6	.402E+00	.723E-01	.209E-01
5/19/78	16:50	2	15.4	12.4	93.9	7.3	.469E+00	.126E+00	.581E-01
5/19/78	17:05	3	15.4	12.4	93.9	7.3	.386E+00	.910E-01	.296E-01
5/19/78	20:05	5	15.3	11.5	97.2	7.6	.779E+00	.558E+00	.414E+00
5/19/78	20:25	6	15.4	11.4	97.8	7.8	.620E+00	.419E+00	.387E+00
5/19/78	20:30	7	15.4	11.4	97.8	7.8	.345E+00	.173E+00	.582E-01
5/20/78	11:00	8	15.3	12.0	90.5	8.1	.110E+00	.404E-01	.142E-01
5/20/78	11:20	9	14.7	12.0	89.4	7.4	.108E+00	.455E-01	.141E-01
5/20/78	11:40	10	14.7	12.0	89.4	7.4	.128E+00	.428E-01	.114E-01
5/20/78	12:00	11	14.6	12.1	88.7	7.7	.914E-01	.337E-01	.734E-02
5/20/78	12:20	12	14.5	12.4	87.0	7.7	.937E-01	.440E-01	.976E-02
5/20/78	12:40	13	14.5	12.4	87.0	7.7	.106E+00	.488E-01	.132E-01
5/20/78	13:00	14	14.1	12.3	90.4	8.1	.983E-01	.468E-01	.126E-01
5/20/78	13:20	15	13.6	12.4	84.4	8.3	.902E-01	.454E-01	.130E-01
5/20/78	13:40	16	13.6	12.4	84.4	8.3	.853E-01	.396E-01	.123E-01
5/20/78	14:00	17	14.2	12.7	82.9	7.9	.747E-01	.317E-01	.976E-02
5/20/78	14:40	19	14.3	12.8	81.2	8.3	.722E-01	.331E-01	.944E-02
5/20/78	15:00	20	14.3	12.8	81.2	8.3	.646E-01	.257E-01	.590E-02
5/20/78	15:20	21	14.4	12.9	80.7	8.3	.688E-01	.274E-01	.611E-02
5/20/78	15:40	22	14.4	12.9	80.7	8.3	.726E-01	.293E-01	.553E-02
5/20/78	16:00	23	14.4	12.9	80.5	8.3	.705E-01	.321E-01	.823E-02

DATE	TIME	FILE	TS C	TAIR C	RH %	U M/S	Extinction (Km^-1) 4880	Extinction (Km^-1) 3.750	10.52
5/20/78	16:20	24	14.4	12.8	81.4	8.1	.747E-01	.339E-01	.744E-02
5/20/78	16:40	25	14.4	12.8	81.4	8.1	.781E-01	.379E-01	.104E-01
5/20/78	17:00	26	14.4	12.6	82.7	8.9	.740E-01	.334E-01	.915E-02
5/20/78	17:20	27	14.5	12.5	82.4	9.0	.703E-01	.323E-01	.763E-02
5/20/78	17:40	28	14.5	12.5	82.4	9.0	.867E-01	.474E-01	.127E-01
5/20/78	18:00	29	14.5	12.5	84.4	9.4	.829E-01	.446E-01	.155E-01
5/20/78	18:20	30	14.6	12.3	83.5	10.3	.830E-01	.438E-01	.159E-01
5/20/78	18:40	31	14.6	12.3	83.5	10.3	.795E-01	.434E-01	.115E-01
5/20/78	19:00	32	14.5	12.2	84.3	10.3	.823E-01	.462E-01	.158E-01
5/20/78	20:00	35	14.1	12.2	87.0	9.0	.103E+00	.601E-01	.181E-01
5/20/78	20:20	36	13.8	12.1	86.7	10.2	.742E-01	.538E-01	.178E-01
5/20/78	20:40	37	13.8	12.1	86.7	10.2	.940E-01	.551E-01	.169E-01
5/20/78	21:00	38	13.7	12.2	87.6	10.0	.930E-01	.532E-01	.148E-01
5/20/78	21:20	39	13.4	12.2	87.7	10.1	.938E-01	.529E-01	.144E-01
5/20/78	21:40	40	13.4	12.2	87.7	10.1	.883E-01	.508E-01	.142E-01
5/20/78	22:00	41	13.2	12.1	87.3	9.7	.969E-01	.498E-01	.162E-01
5/20/78	22:20	42	13.0	12.2	87.7	9.4	.895E-01	.497E-01	.139E-01
5/20/78	22:40	43	13.0	12.2	87.7	9.4	.931E-01	.554E-01	.178E-01
5/20/78	23:00	44	13.0	12.1	87.1	9.0	.923E-01	.535E-01	.199E-01
5/20/78	23:20	45	13.1	12.0	87.9	9.3	.952E-01	.574E-01	.182E-01
5/20/78	23:40	46	13.1	12.0	87.9	9.3	.820E-01	.430E-01	.113E-01
5/20/78	00:00	47	13.0	11.9	87.7	9.6	.944E-01	.673E-01	.150E-01

Date	Time	FILE	TS	Temp	RH	W	W/S	Extinction (Km^-1)
					%			
5/21/78	01:00	51	13.1	12.0	88.3	9.2	.4089	3.250
								10.59
5/21/78	01:00	52	13.1	12.0	88.3	9.2	.926E-01	.134E-01
5/21/78	02:00	53	13.0	11.9	87.9	8.8	.821E-01	.461E-01
5/21/78	03:00	54	13.1	11.9	87.0	8.1	.357E-01	.490E-01
5/21/78	03:00	55	13.0	11.9	85.7	8.2	.826E-01	.599E-01
5/21/78	03:40	56	13.0	11.9	85.7	8.2	.741E-01	.930E-02
5/21/78	04:00	57	13.0	11.9	83.9	8.1	.652E-01	.323E-01
5/21/78	04:20	58	13.0	11.9	82.7	8.7	.639E-01	.334E-01
5/21/78	04:40	59	13.0	12.0	81.2	8.9	.655E-01	.290E-01
5/21/78	05:00	60	13.1	12.1	81.4	7.9	.598E-01	.274E-01
5/21/78	05:20	61	13.1	12.1	81.4	7.9	.563E-01	.253E-01
5/21/78	05:40	62	13.1	12.1	81.4	7.9	.630E-01	.307E-01
5/21/78	06:00	63	13.0	12.2	80.0	8.2	.560E-01	.290E-01
5/21/78	06:20	64	13.0	12.2	79.5	7.7	.597E-01	.306E-01
5/21/78	06:40	65	13.1	12.3	79.5	7.7	.539E-01	.261E-01
5/21/78	07:00	66	13.1	12.3	78.8	6.8	.554E-01	.776E-01
5/21/78	07:00	67	13.1	12.4	78.8	6.8	.517E-01	.247E-01
5/21/78	07:00	68	13.1	12.4	78.8	6.8	.517E-01	.615E-02

BIBLIOGRAPHY

1. Fairall, C. W., G. E. Schacher, and K. L. Davidson (1980): "Atmospheric Optical Comparisons During MAGAT-80", Technical Report NPS-61-81-002.
2. Fitzgerald, J. W. and R. E. Ruskin (1976): "A Marine Aerosol Model for the North Atlantic", Technical Report NR2.
3. Houlihan, T. M., K. L. Davidson, C. W. Fairall, and G. E. Schacher (1978): "Experimental Aspects of a Shipboard System Used in Investigation of Overwater Turbulence and Profile Relationships", Technical Report NPS-61-78-007.
4. Hughes, H. G. (1980): "Aerosol Extinction Coefficient Variations With Altitude at 3.75 μ m in a Coastal Marine Environment", J. Appl. Met., 19, 803-808.
5. Katz, Barry (1980): Private Communication
6. Larson, R. E., W. Kasemir, and D. J. Bressan (1979): "Measurements of Atmospheric ^{222}Rn at San Nicholas Island and Over Nearby California Coastal Areas During CEWCON-78", Technical Report NRL #3941.
7. Noonkester, V. Ray (1980): "Offshore Aerosol Spectra and Humidity Relations Near Southern California", Proceedings Second Conference on Coastal Meteorology, AMS, Boston, Massachusetts, 113-120.
8. Schacher, G. E., K. L. Davidson, and C. W. Fairall (1980): "Optical Aerosol Spectrometers? Factors Affecting Optical Extinction Predictions", Technical Report NPS-61-80-013.

BIBLIOGRAPHY (continued)

9. Wells, W. C., G. Gal, and M. W. Munn (1977): "Aerosol Distributions in Maritime Air and Predicted Scattering Coefficients in the Infrared", *Applied Optics*, 16, 654-659.

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