Recent ASSA Results on Comets and Meteors

Tim Cooper
Director, Comet and Meteor Section
Agenda

• Methodology of Comet Observation
• Results on a Selection of Comets
• Methodology of Meteor Observation
• Results on some Meteor Work
• Future Programs and Conclusions
Figure 1  Typical Comet Report

<table>
<thead>
<tr>
<th>Date</th>
<th>Year</th>
<th>Day</th>
<th>Loc.</th>
<th>Magnitude</th>
<th>Brightness</th>
<th>Distance</th>
<th>Magnitude</th>
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Figure 2  Degree of Condensation Scale

0  Totally diffuse without any brightening
toward the centre of the coma
1  Very slight brightening
3  Obvious brightening but coma still very diffuse
5  Distinct brightening, would be described as
    moderately condensed
7  Sharp brightening with some diffuse coma,
    would be described as strongly condensed
9  Star-like or small disk, little if any diffuse coma
Figure 3  Comet Hale-Bopp C/1995 O1
Figure 4  Comet SOHO C/1998 J1
Figure 5  Comet LINEAR C/2001 A2
Figure 6  Comet LINEAR C/2000 WM1
Meteor Rate Calculation

Rate = $\frac{N}{T}$ \hspace{2cm} (1)

$ZHR = \frac{N \cdot F \cdot r^{(6.5-LM)}}{T_{eff} \cdot \sin h \cdot C_p}$ \hspace{2cm} (2)

$\Delta ZHR = ZHR / \sqrt{N}$ \hspace{2cm} (3)
Figure 7
eta Aquarid
Activity Profiles
Figure 8
April Lyrid
Activity Profiles
Figure 9
Virginid Plots
Tim Cooper
1998 March 31 - Apr 5
Figure 10  The Leonids in 1999
Future Programs

- CCD photometry of faint comets
- Comet search and discovery
- Radio monitoring of meteors
- Video observation of meteors
- Double station photography of meteors
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<th>Minute</th>
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\[ \Delta \text{ZHR} = \frac{\text{ZHR}}{\sqrt{N}} \quad (3) \]
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Figure 8
April Lyrid
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[Graphs showing activity profiles for April Lyrid meteor showers]
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