Building the HectoMAP 1986-2012+

Michael J.Kurtz

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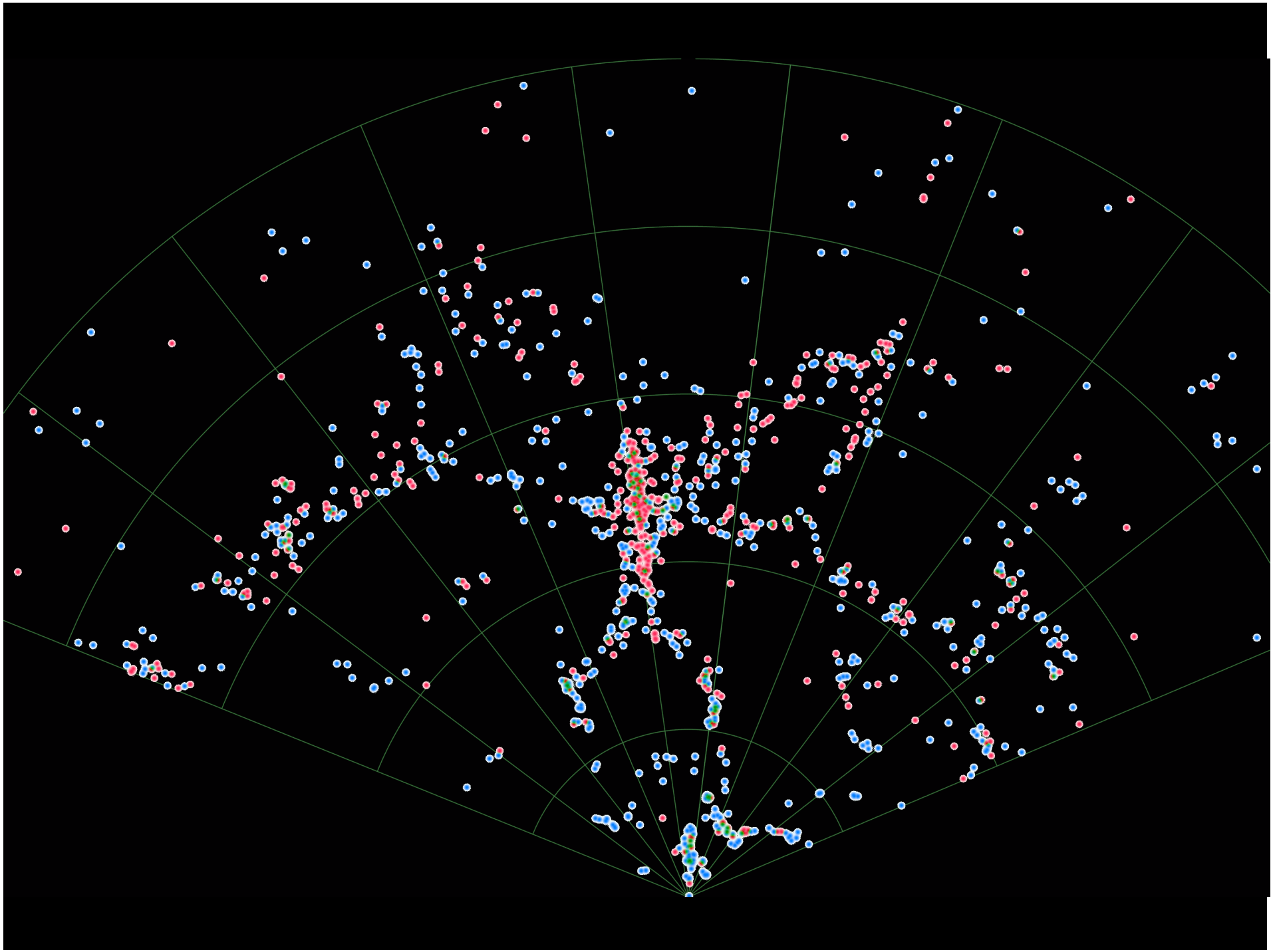
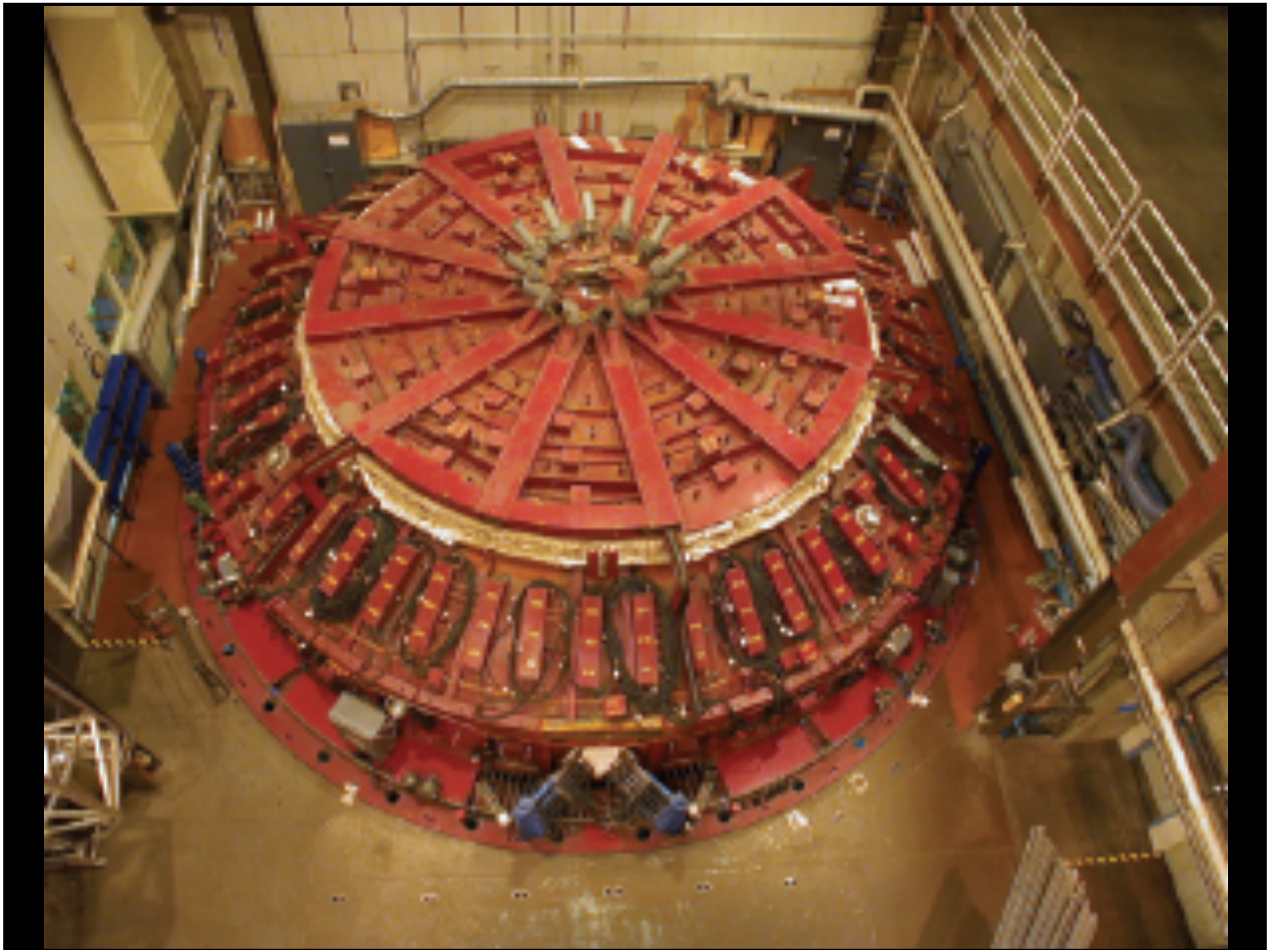




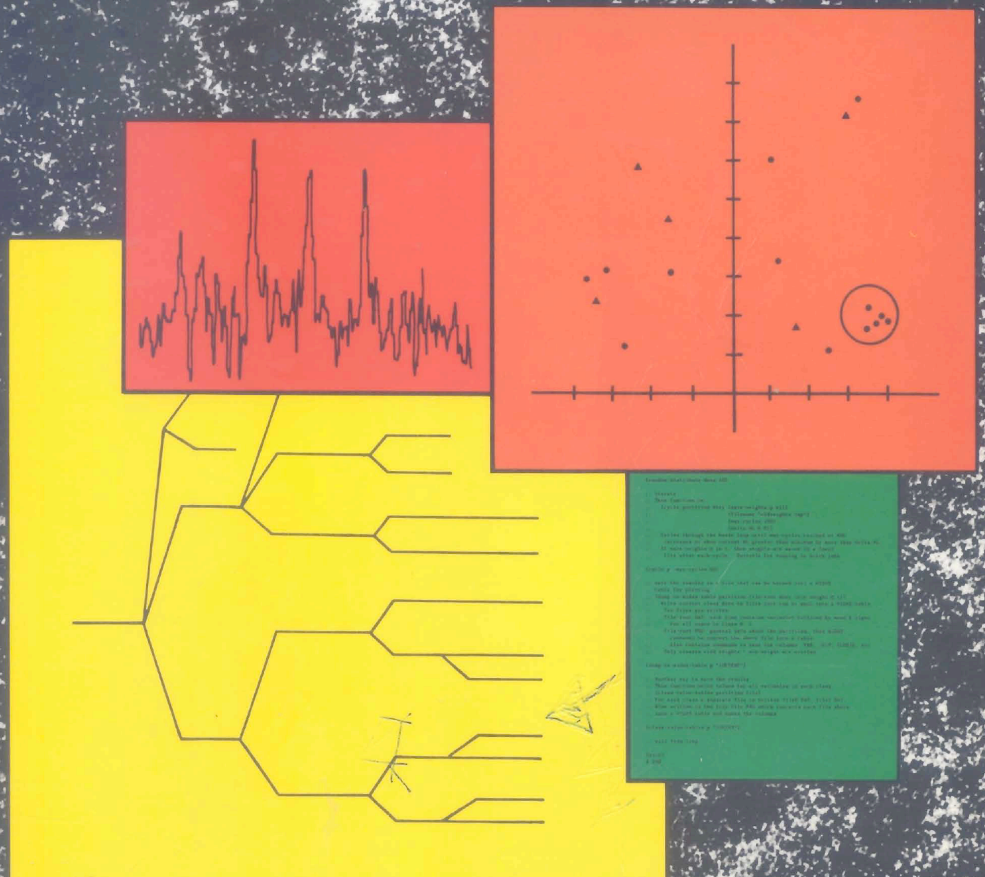
esa SPACE TELESCOPE

ESO European Coordinating Facility

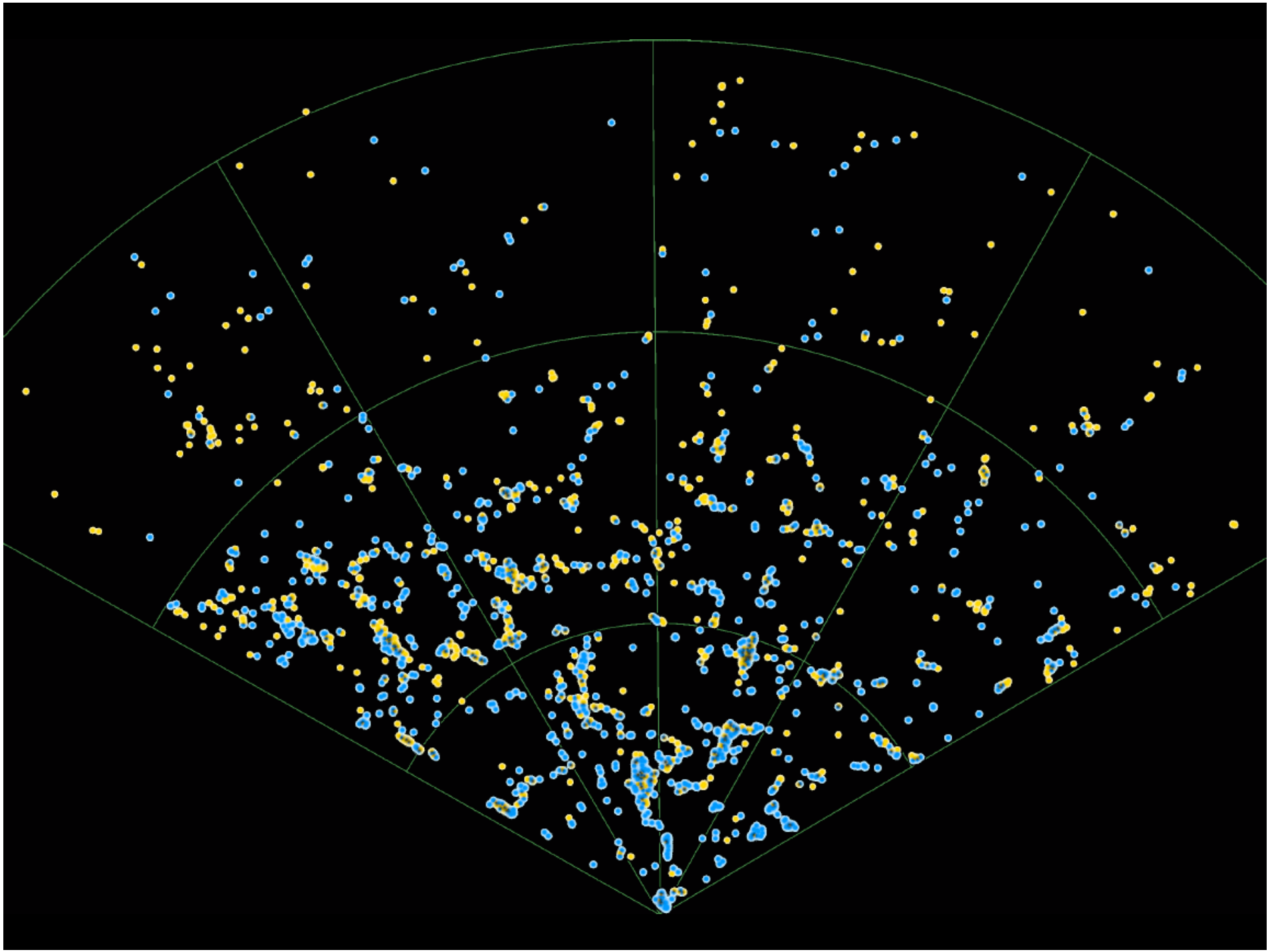
ASTRONOMY FROM LARGE DATABASES

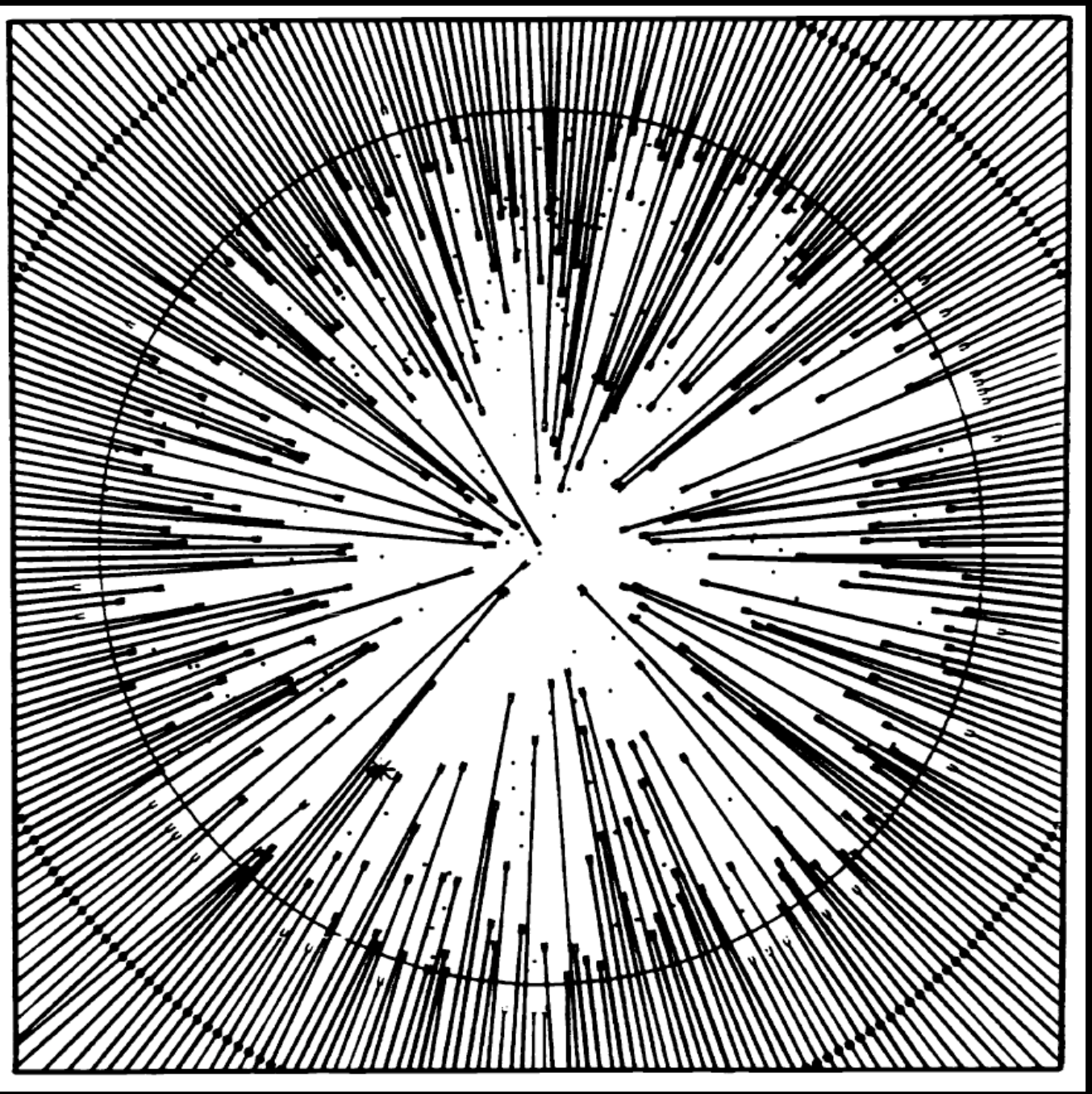
SCIENTIFIC OBJECTIVES AND METHODOLOGICAL APPROACHES

Garching, 12–14 October 1987



Certainly our knowledge of structures at larger scales does not permit a detailed characterization of them at this time. The recent discovery by de Lapparent *et al.* 1986 of galaxy-filled surfaces surrounding large empty regions similar to the void in Bootes (Kirshner *et al.* 1987) can give rise however to some wild speculation. Perhaps sometime in the next century astronomers will have distinguished several different kinds of surfaces and voids, and will be able to attempt a comparison of the distribution of the various types with galaxy clusters, with each other, and with the distribution of fluctuations (by then discovered?) in the cosmic microwave background. From this, knowledge about the VERY large scale structure of the universe may result.



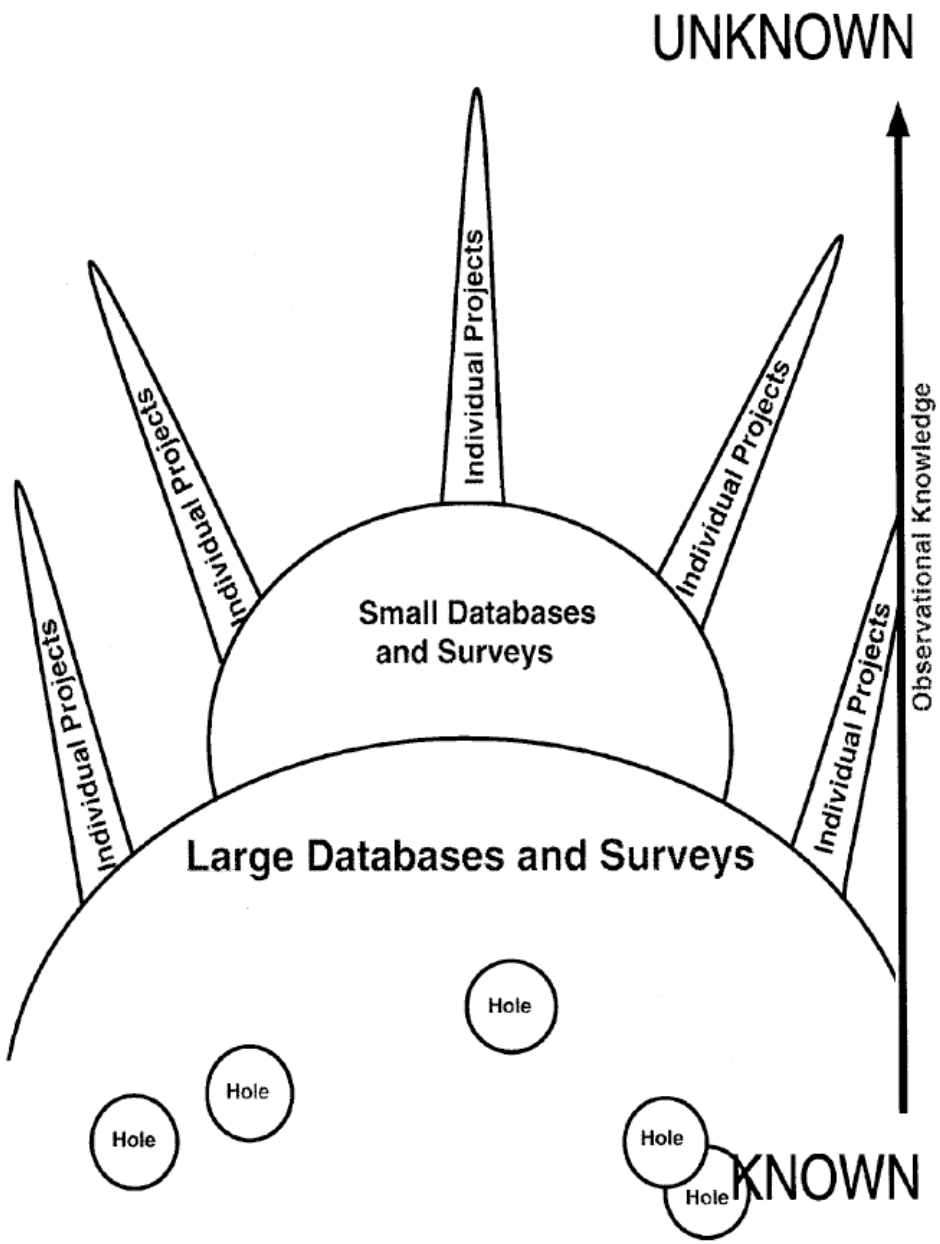


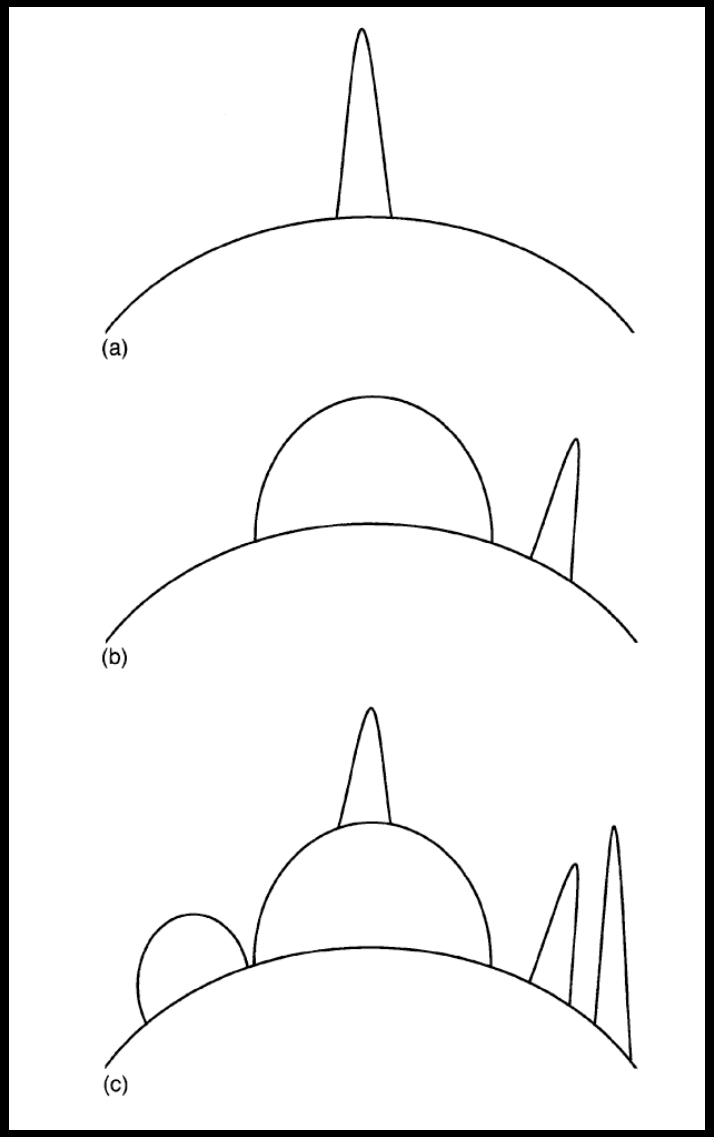
16 The Need for Automation in the Reduction and Analysis of Stellar Spectra

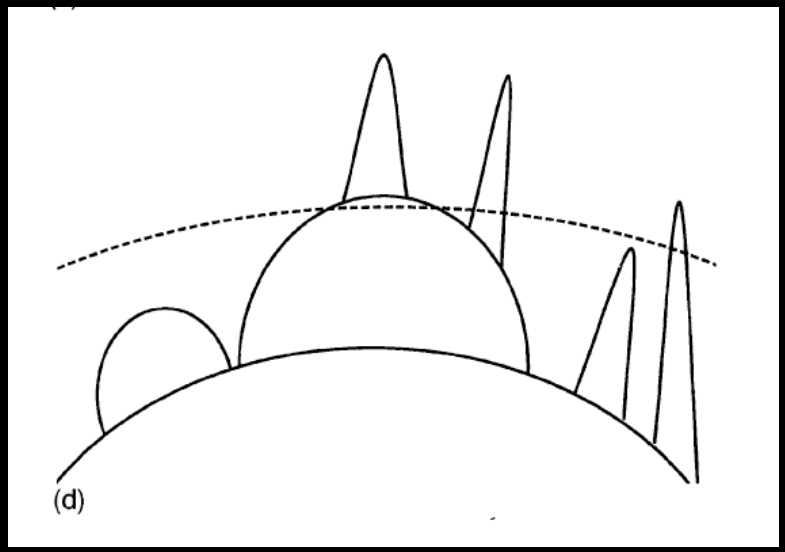
M. J. Kurtz

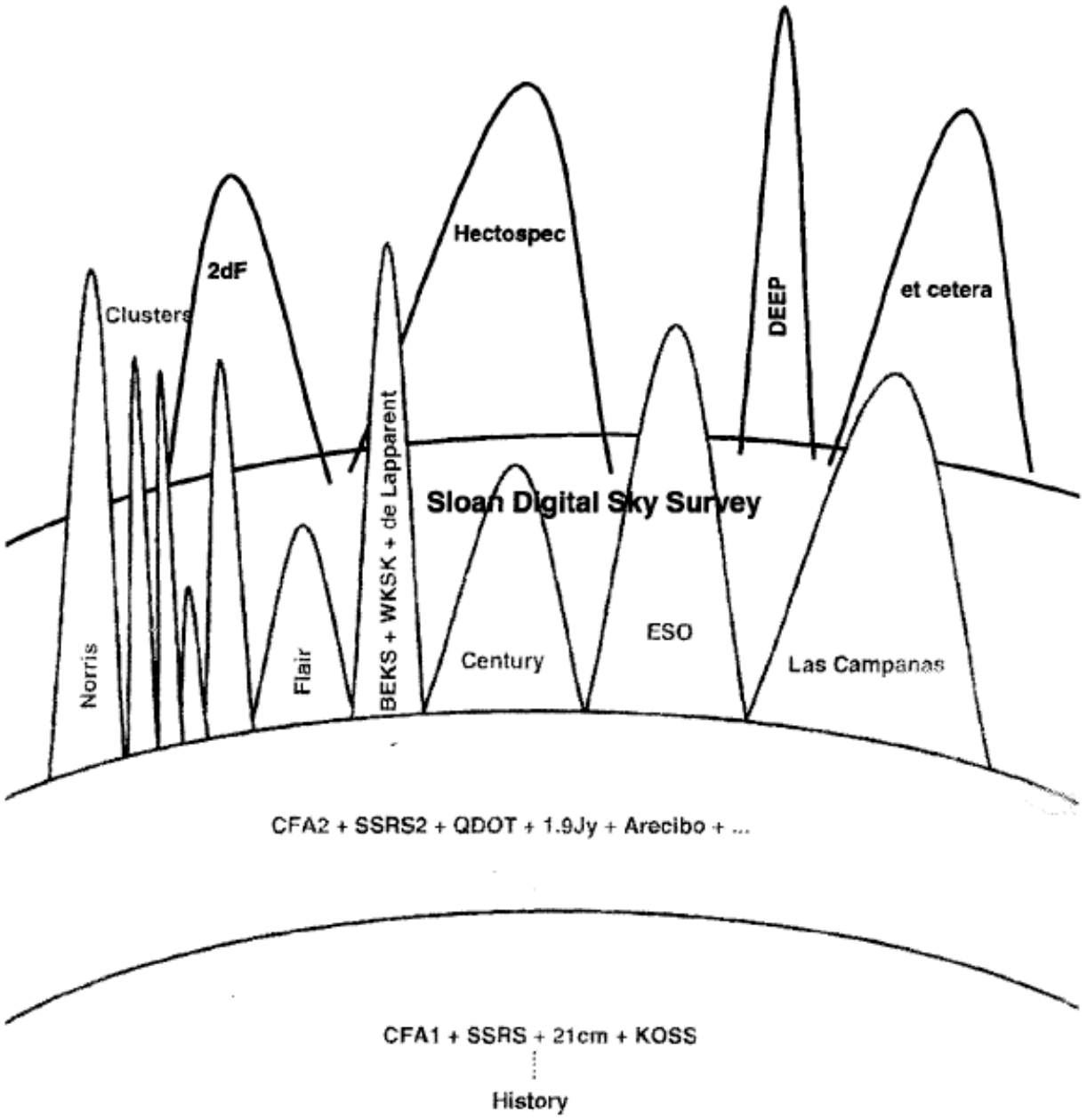
Advances in instrumentation and optics have brought us to the edge of a new era in spectroscopy. Beginning in 1995, it will be possible for a single instrument, the upgraded MMT, using a 300–fiber spectrograph, to obtain 1000 classification quality spectra per hour for stars with $V < 14$. Several other similar projects, both larger and smaller, are planned.

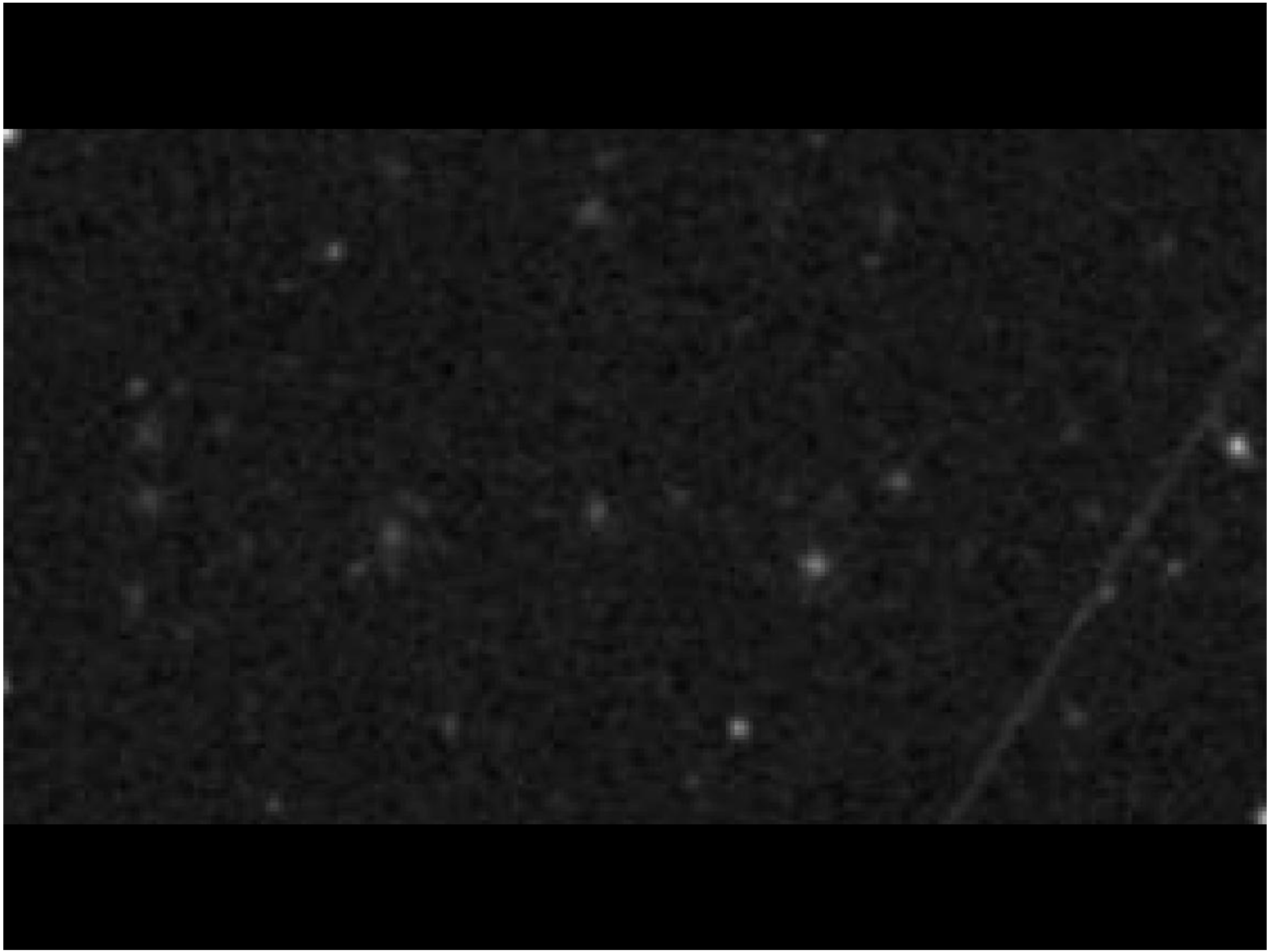
The ability of individual researchers to obtain 100,000 spectra per year will cause substantial changes in the way they are used. For results to be understood, a standard nomenclature describing normal spectra must be used, and it must be possible to obtain these descriptors automatically. The MK system can and should serve as the basis for this system of description; an automated procedure for obtaining MK types must be developed.

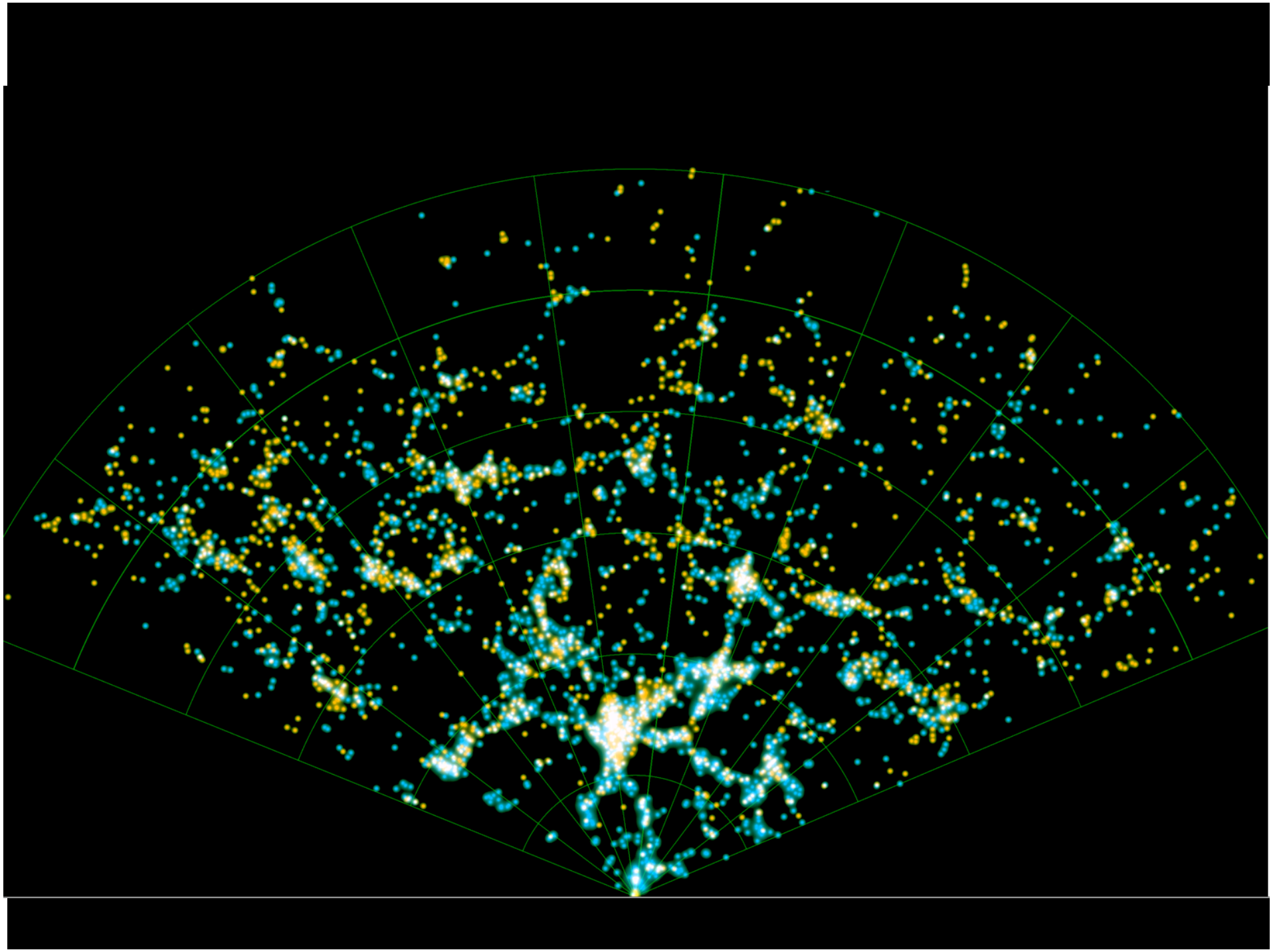

UNKNOWN
Individual Projects
Individual Projects
Individual Projects
Individual Projects
Individual Projects
Observational Knowledge
Small Databases and Surveys
Large Databases and Surveys
Hole
Hole
Hole
Hole
Hole
KNOWN

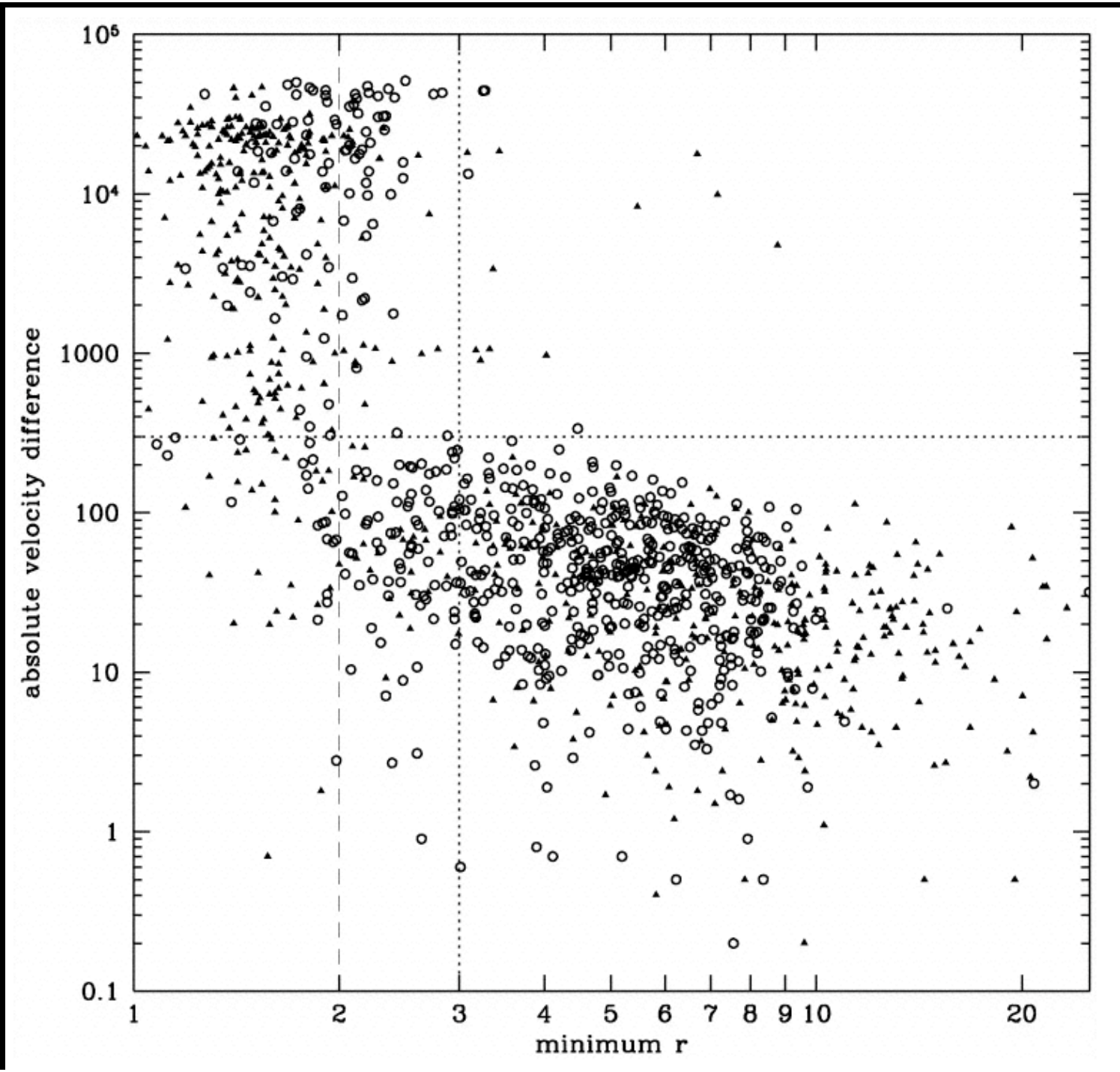

(a)
(b)
(c)

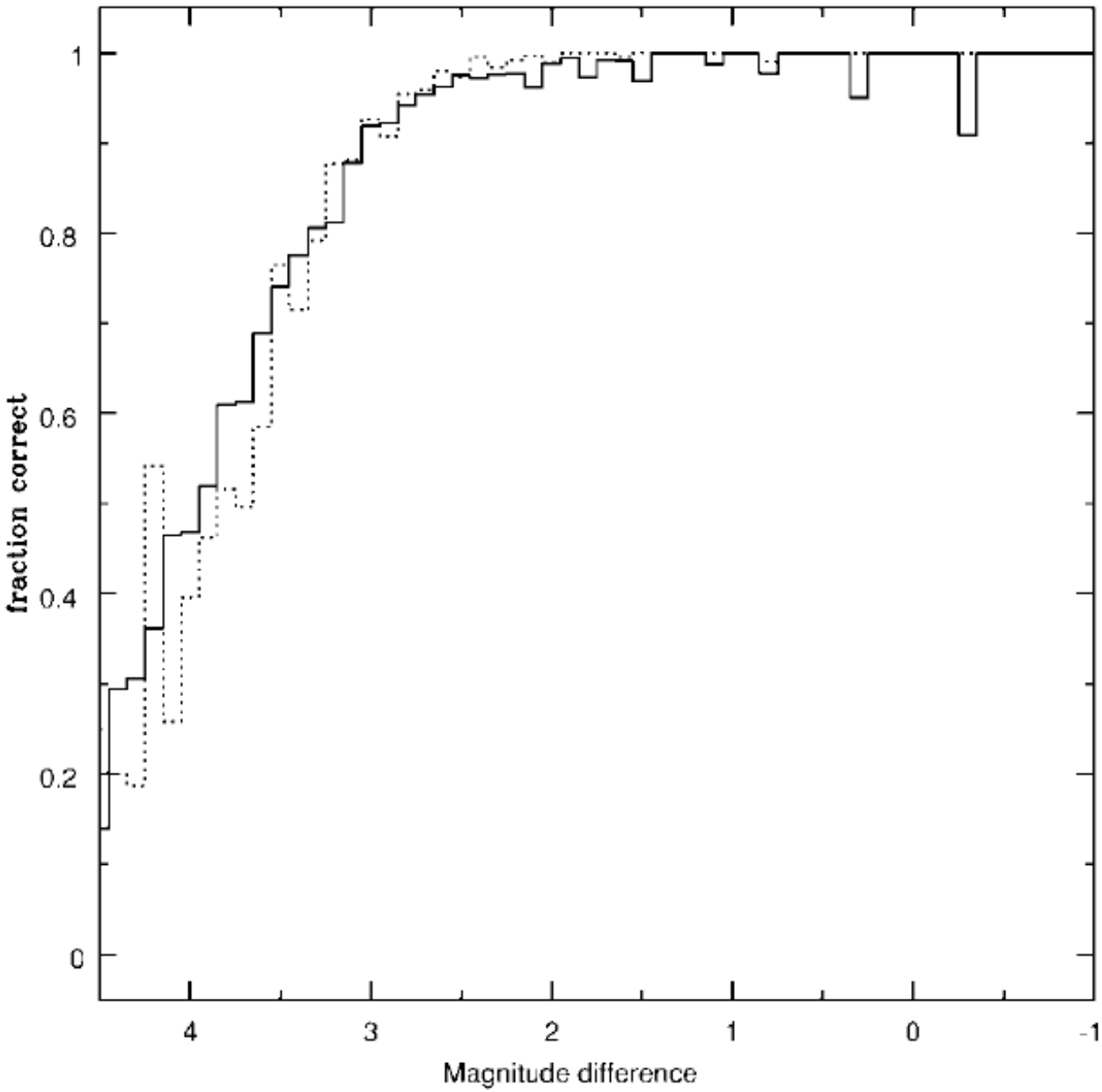

(d)

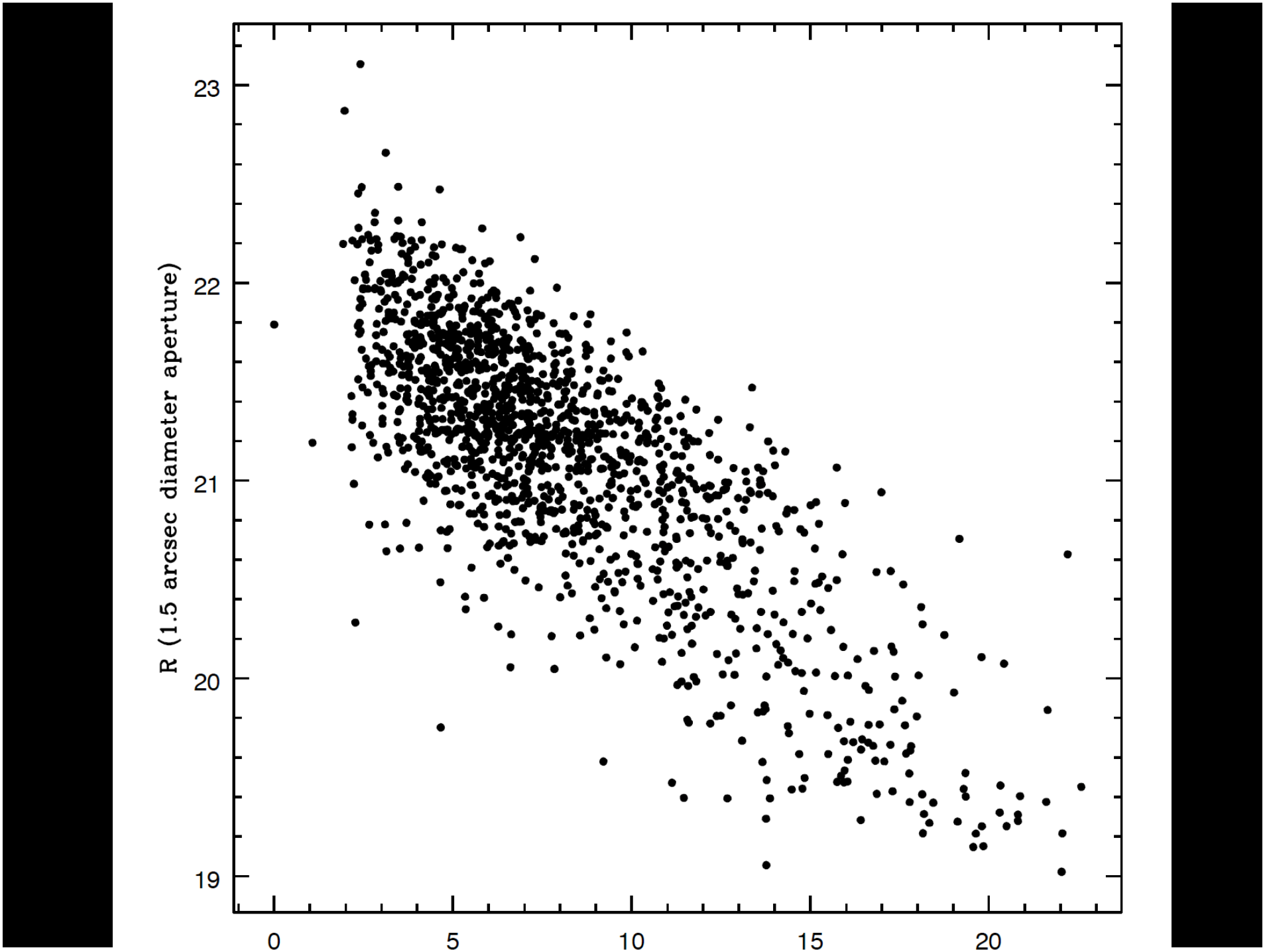

Hectospec
2dF
Clusters
DEEP
et cetera
Sloan Digital Sky Survey
BEKS + WKSK + de Lapparent
Norris
Flair
Century
ESO
Las Campanas
CFA2 + SSRS2 + QDOT + 1.9Jy + Arecibo + ...
CFA1 + SSRS + 21cm + KOSS
History

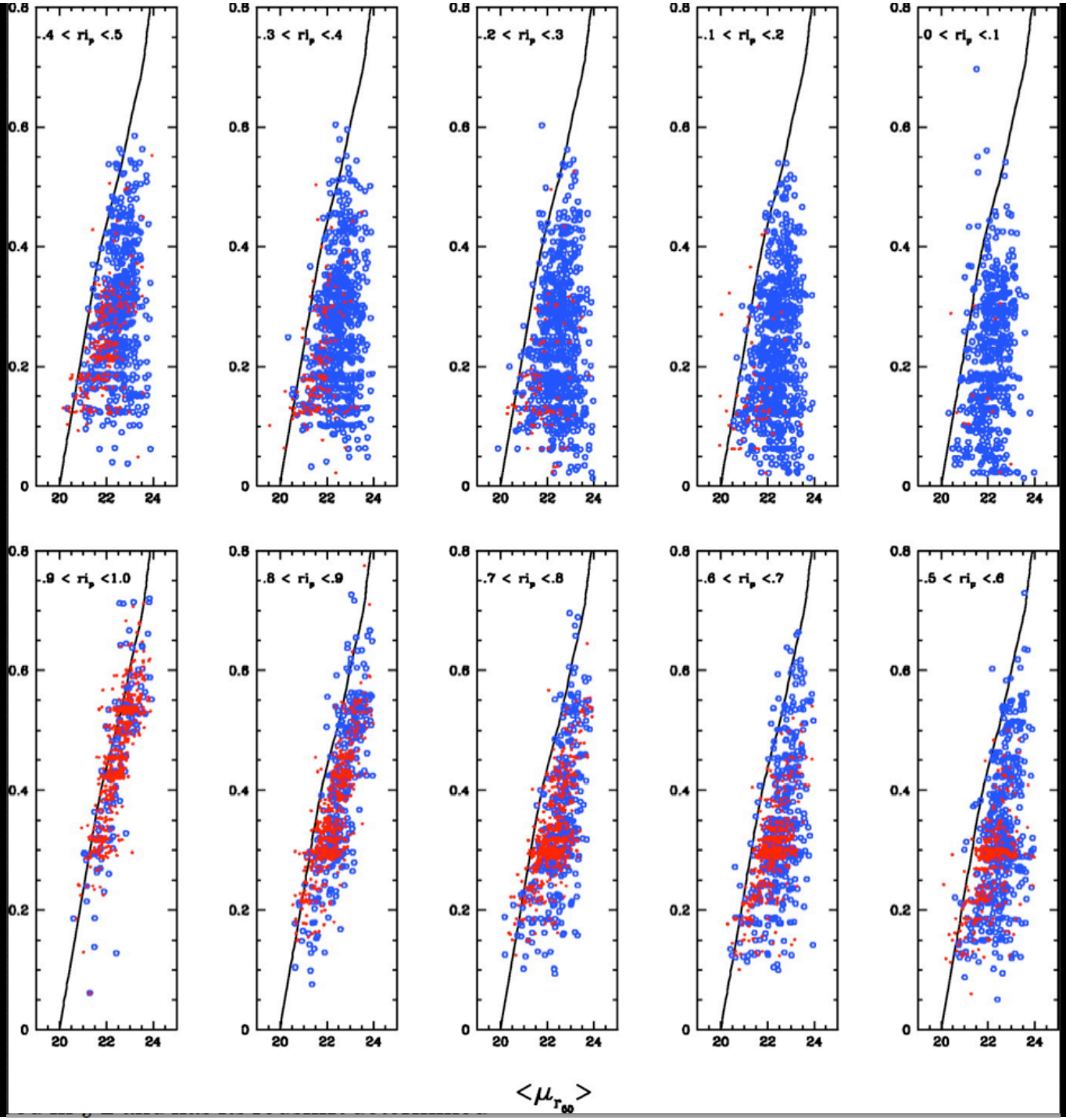


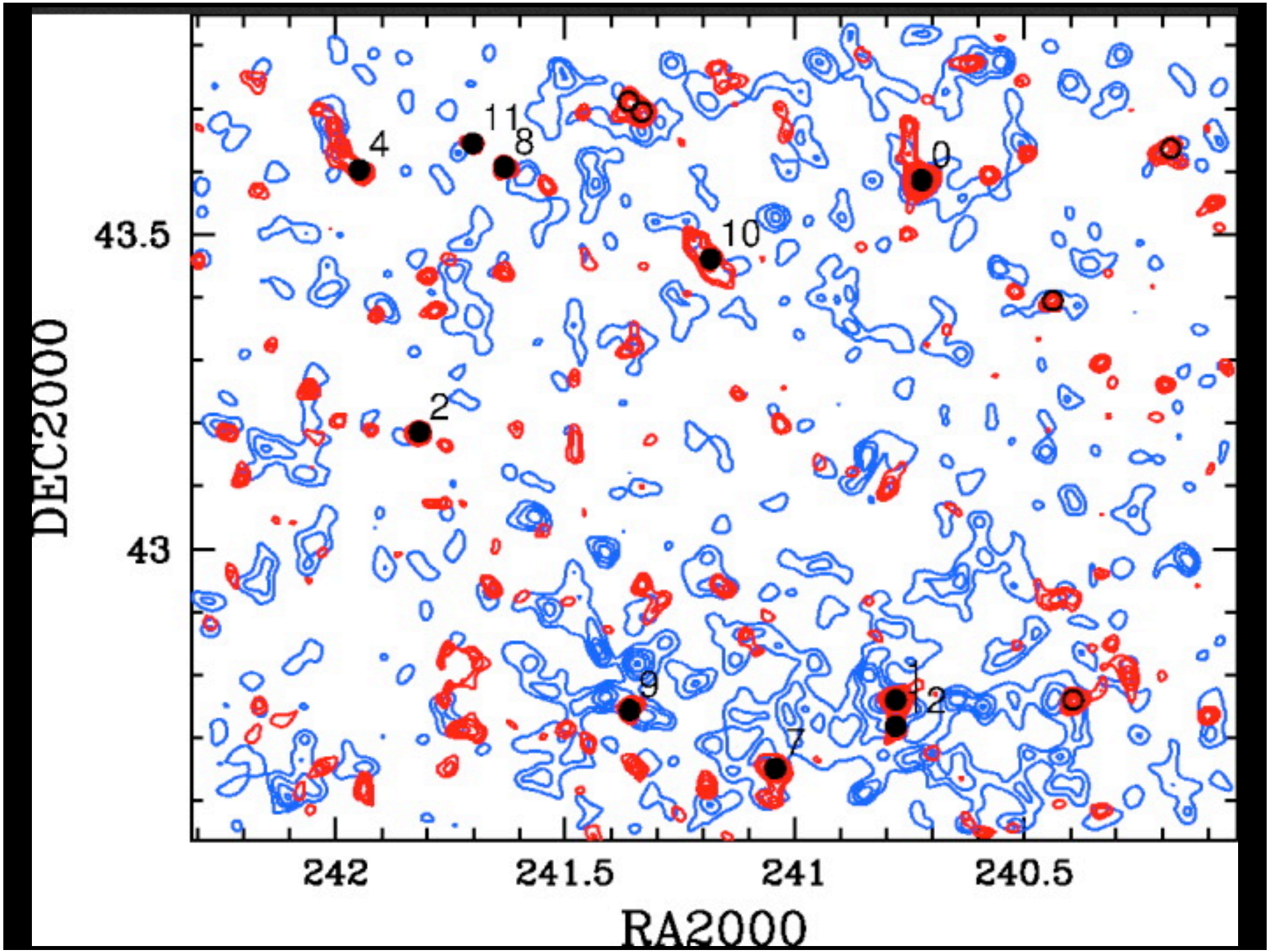



absolute velocity difference
minimum r
10⁵
10⁴
1000
100
10
1
0.1
1
2
3
4
5
6
7
8
9
10
20


fraction correct
1
0.8
0.6
0.4
0.2
0
4
3
2
1
0
-1
Magnitude difference


R (1.5 arcsec diameter aperture)
23
22
21
20
19
0
5
10
15
20
TDr (absorption line template)

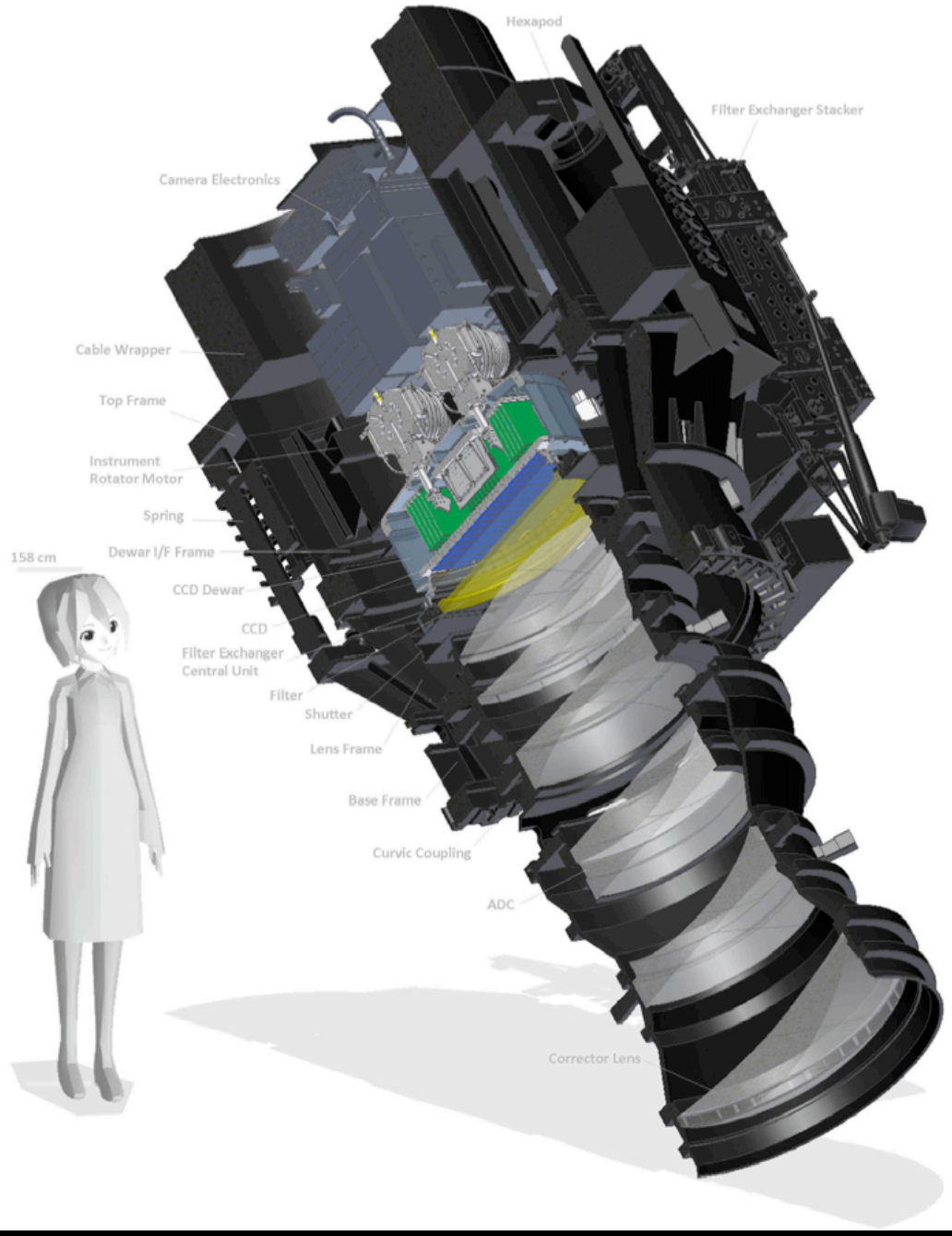

.4 < ri_p <.5
.3 < ri_p <.4
.2 < ri_p <.3
.1 < ri_p <.2
.0 < ri_p <.1
.9 < ri_p <1.0
.8 < ri_p <.9
.7 < ri_p <.8
.6 < ri_p <.7
.5 < ri_p <.6
0
0.2
0.4
0.6
0.8
20
22
24
<μ_r50>
<μ_r50>


DEC2000
43.5
43
242
241.5
241
240.5
RA2000
4
11
8
0
10
2
9
12
7

HectoMAP

Margaret J. Geller, Michael J. Kurtz and Daniel G. Fabricant

Smithsonian Astrophysical Observatory


Hexapod
Filter Exchanger Stacker
Camera Electronics
Cable Wrapper
Top Frame
Instrument
Rotator Motor
Spring
Dewar I/F Frame
158 cm
CCD Dewar
CCD
Filter Exchanger
Central Unit
Filter
Shutter
Lens Frame
Base Frame
Curvic Coupling
ADC
Corrector Lens