

TABLE OF CONTENTS

Foreword and Acknowledgements	S. D'Odorico J.P. Swings	iii
List of Participants		v
Introduction	L. Woltjer	1
Scientific Objectives of the VLT	E.J. Wampler	3
A Few Scientific Highlights	M.H. Ulrich	15
The ESO Very Large Telescope. Part I: Concept	D. Enard	25
The Involvement of European Astronomers in ESO's Very Large Telescope Concept	J.P. Swings	51
Working Group Report on Infrared Aspects	A.F.M. Moorwood	55
IR Imagery and Bidimensional Arrays	F. Sibille	83
Infrared Spectroscopy	P. Salinari	89
High Resolution Spectroscopy	I. Appenzeller	93
High-Resolution Grating Spectrographs	J. Solf	107
Fourier Transform Spectrographs	L. Delbouille	119
Report of the VLT Working Group on Image and Low Resolution Spectroscopy	H.R. Butcher	127
Multi-Object Spectroscopy with the VLT	M. Dennefeld, B. Fort	151
A Role for Intermediate Resolution Spectroscopy	I.J. Danziger	165
High Resolution Imaging	S. di Serego Alighieri	173
Interferometric Imaging with the Very Large Telescope	P. Léna	179
Interferometric Image Restoration	D. Downes	205
Optical Parameters of the Atmosphere and High-Resolution Long-Exposure Imaging	G. Weigelt, G. Baier, S. Helm, M. Müller, C. Wurm	215
ESO VLT Site Evaluation. I	A. Ardeberg	221
ESO VLT Site Evaluation. II	M. Sarazin	229
On the Relative Merits of Some Possible VLT Sites in Chile	A. Ardeberg, H. Lindgren, I. Lundström	241

Guidelines for a Site Testing Campaign and the LASSCA Experience	F. Roddier	261
Interferometric Seeing Measurements at La Silla	C. Roddier, F. Roddier	269
SCIDAR Measurements and Model Forecasting of Free Atmospheric Turbulence	J. Vernin	279
Speckle Masking, Speckle Spectroscopy and Optical Aperture Synthesis	G. Weigelt, K.-H. Hofmann, T. Reinheimer	289
The NTT as VLT Precursor	M. Tarenghi	299
Remote Control - Present Tests and Future Plans	G. Raffi, M. Ziebell	317
Future Detectors and Their Implications to the VLT	M.J. Cullum	331
Telescope Interface to Instrumentation	D. Enard	343
A Possible Instrument Package for the VLT	S. D'Odorico, B. Delabre	349
Infrared Instrumentation	A.F.M. Moorwood	361
Mechanical Structure of the 8 Meter Telescope Unit	M. Schneermann	365
The VLT Enclosure	L. Zago	379
Beam Combination Modes of the VLT	F. Merkle	403
Active Control and Mirror Support for the VLT	R.N. Wilson	417
Adaptive Optics for the VLT	F. Merkle	443
The ESO Very Large Telescope. Part II: Primary Mirrors - Project Cost and Schedule	D. Enard	457
General Discussion		477
Conclusion	L. Woltjer	483