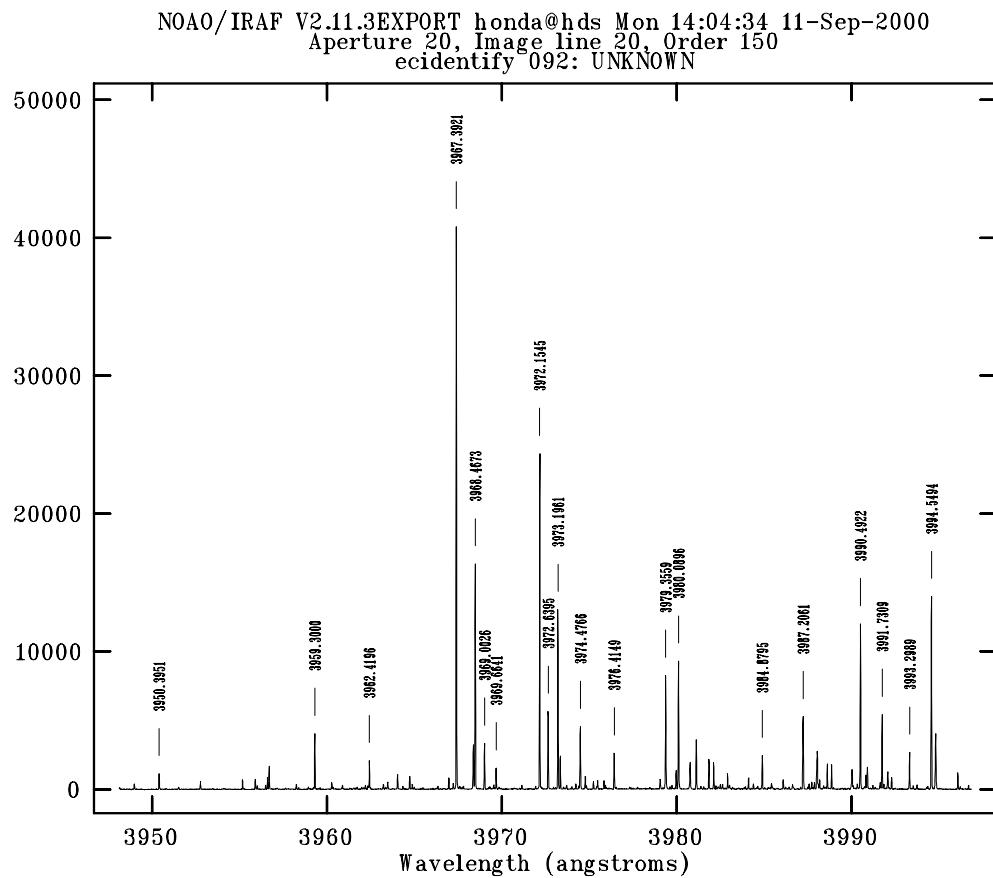


Subaru Telescope High Dispersion Spectrograph

An Atlas of Th-Ar Spectra:

ver. 1.1

Echelle Order = 150



S. Honda & W. Aoki
National Astronomical Observatory of Japan
Feb., 2002

Subaru Telescope High Dispersion Spectrograph

An Atlas of Th-Ar Spectra:

S. Honda & W. Aoki

National Astronomical Observatory of Japan

Feb., 2001 (Revision in Feb., 2002)

1. HDS Th-Ar Spectra

The Th-Ar spectra were obtained with the Subaru/HDS (High Dispersion Spectrograph, Noguchi et al. 1998) for 3000-9700Å. The RGL 31.6 grooves/mm grating is used as the echelle, and the EEV 42-80 CCDs are used as the detector in the HDS.

The data reduction was done with the IRAF¹ 'echelle' package. The echelle blaze profile is not corrected for the Th-Ar spectra, so that the line intensity generally looks decreasing from the center to the both edges in each spectrum. The lines were identified with the IRAF 'eidentify' routine. The rms fit is typically better than 0.01Å.

2. Line Data

For the line identification, the KPNO Th-Ar Atlas (Willmarth, D. W. 1987) was used for 3200-9500Å. For the wavelength ranges which were not covered by the KPNO Th-Ar Atlas, the Th line data in the atomic line list (Hirata & Horaguchi 1994) are adopted.

3. References

Hirata R. & Horaguchi T., 1995, *Atomic spectral line list*, <ftp://dbc.nao.ac.jp/pub/CDS/cats/VI/69>

Noguchi K., et al., 1999, High Dispersion Spectrograph (HDS) for Subaru Telescope, SPIE, 3355, 354

Willmarth, D. W. 1987, A CCD Atlas of Comparison Spectra, Thorium-Argon Hollow Cathode 3180Å-9540Å, Kitt Peak National Observatory, National Optical Astronomy Observatories

4. Change Redord

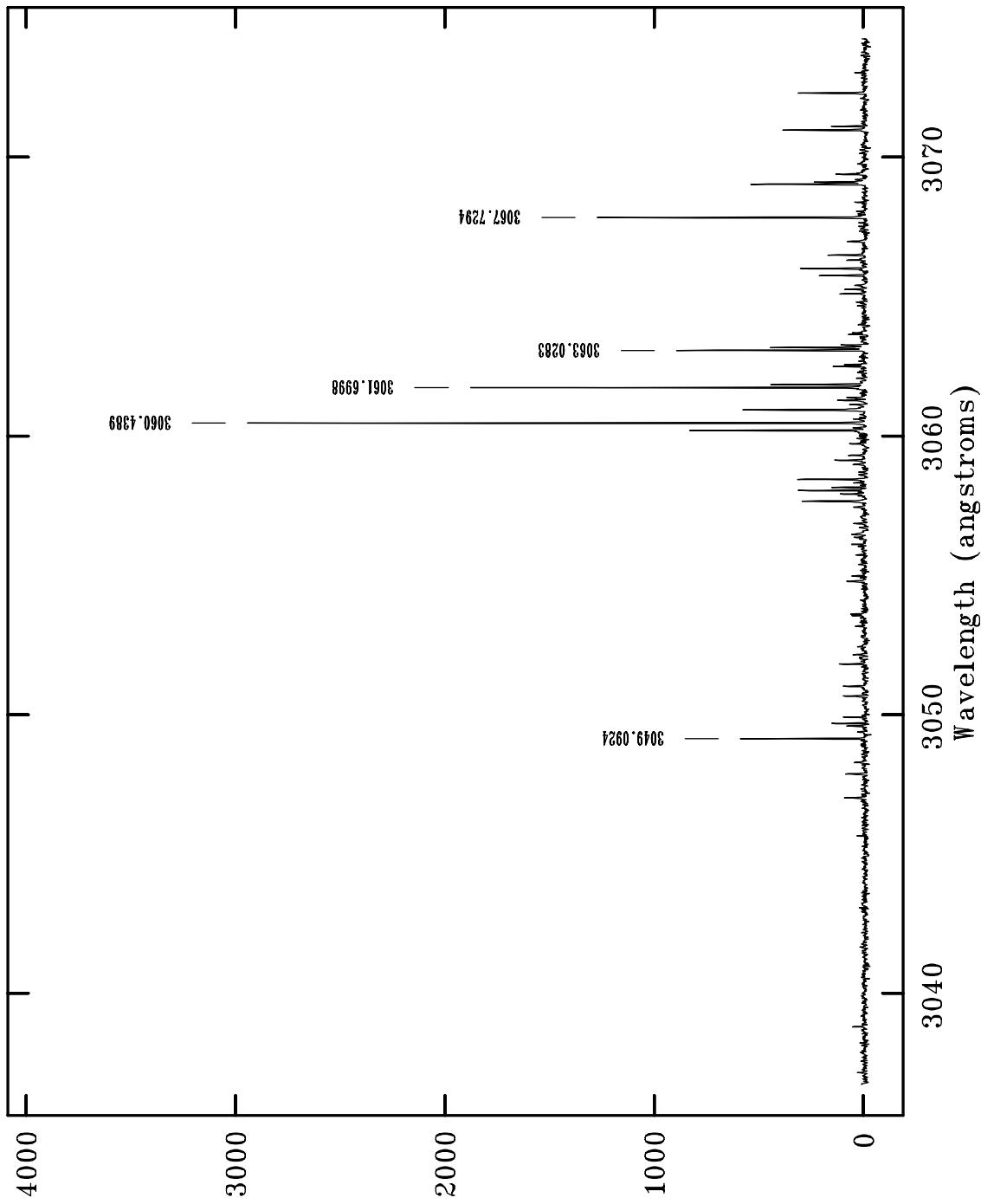
1st release Feb. 2001

2nd release Feb. 2002: change the figure of 90th order (p. 108)

¹IRAF is distributed by the National Optical Astronomy Observatories, which are operated by the Association of Universities for Research in Astronomy, Inc., under cooperative agreement with the National Science Foundation

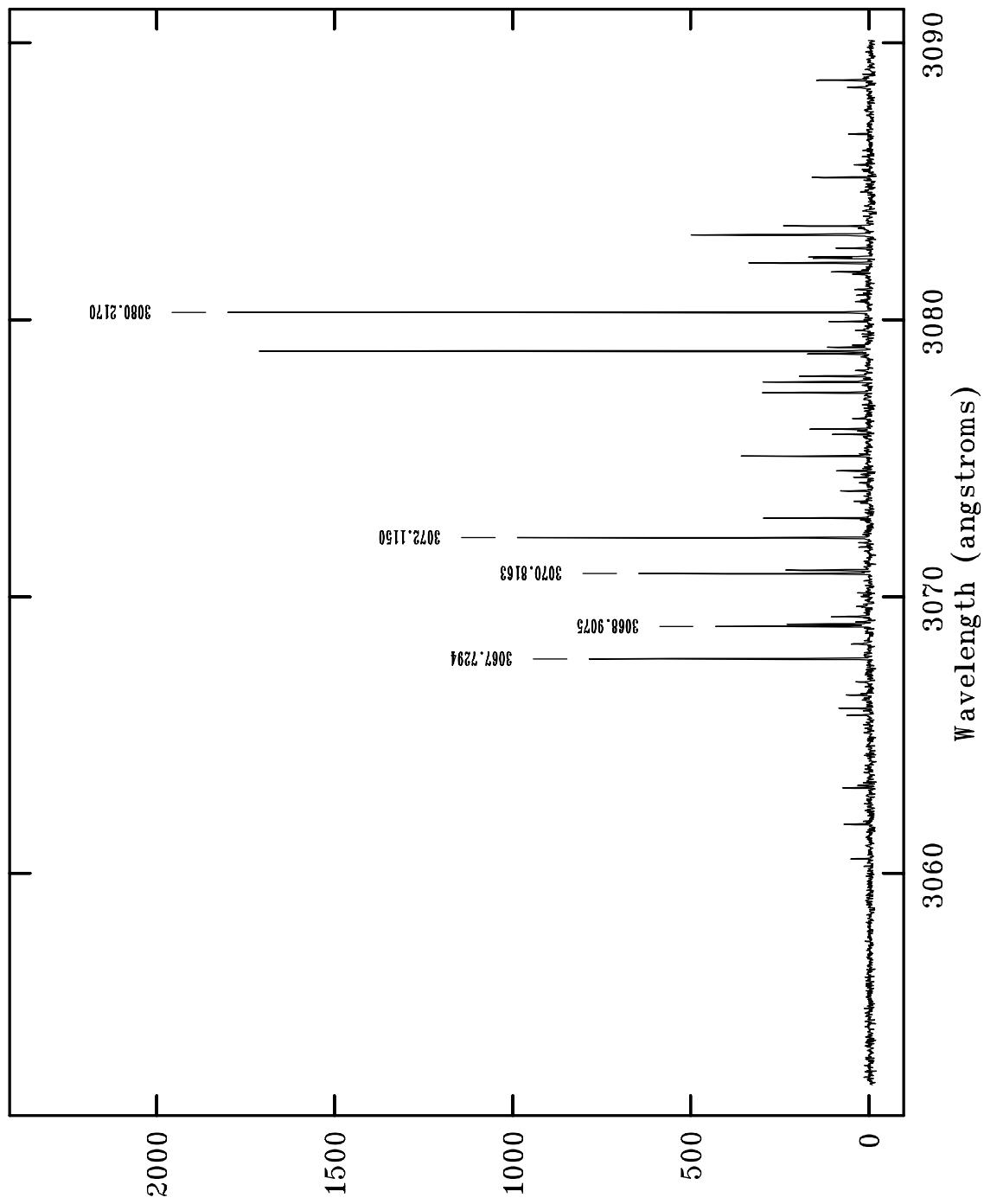
Echelle Order = 195

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 20:05:26 12-oct-2000
Aperture 34, Image Line 34, Order 194
ecidify 093: UNKNOWN



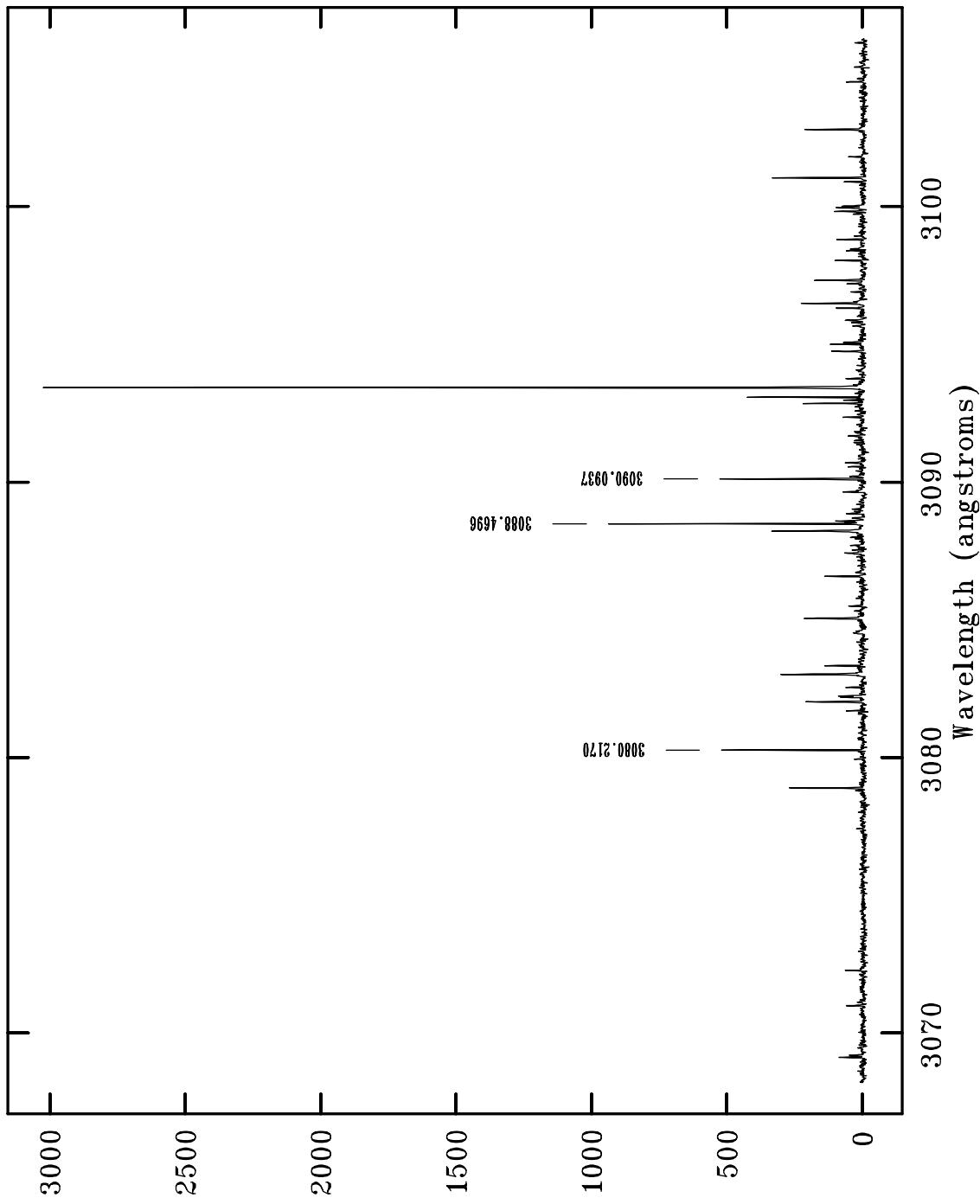
Echelle Order = 194

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 20:03:24 12-Oct-2000
Aperture 33, Image line 33, Order 193
ecidentry 093: UNKNOWN



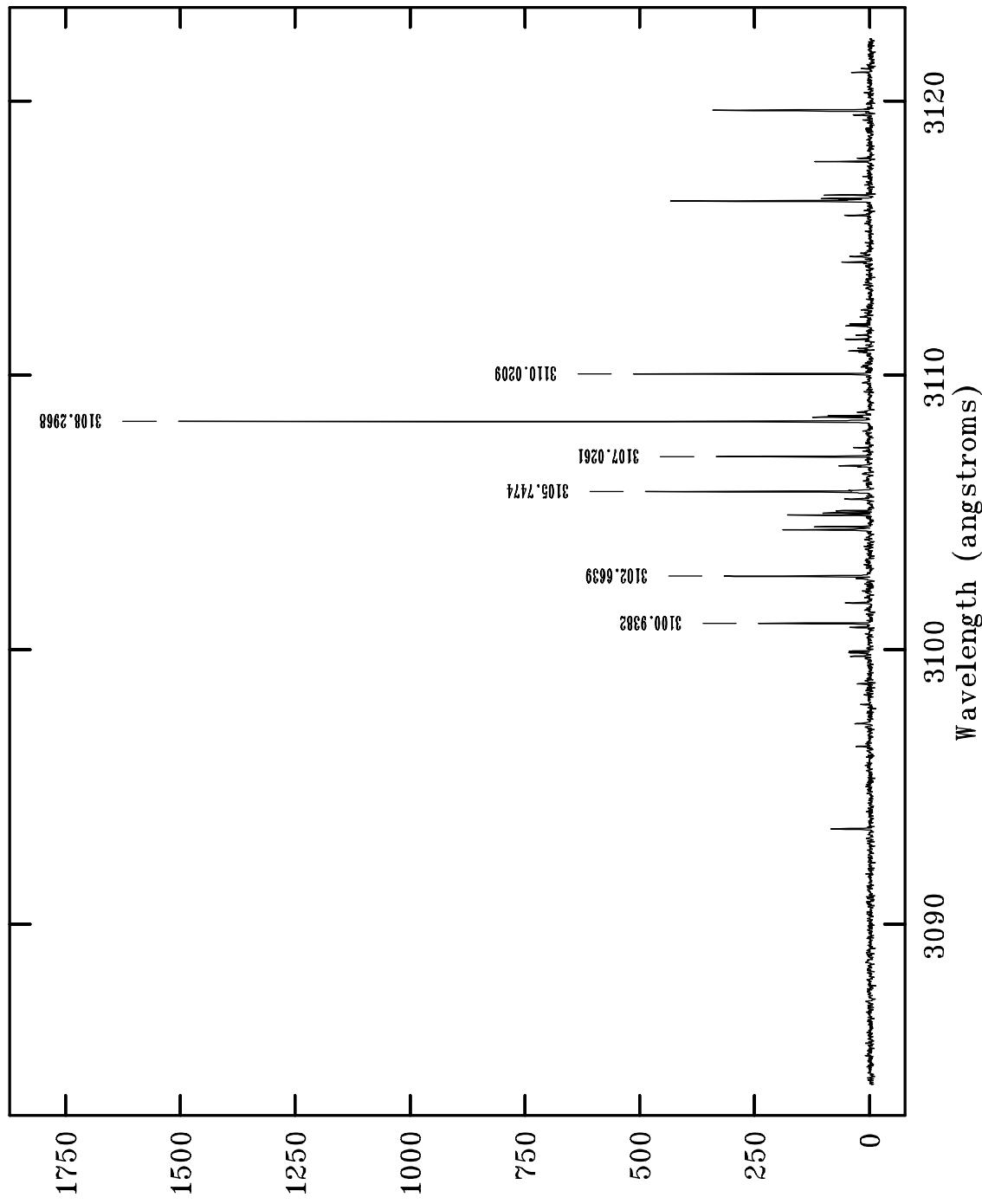
Echelle Order = 193

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 20:01:30 12-oct-2000
Aperture 32, Image Line 32, Order 192
ecidify 093: UNKNOWN



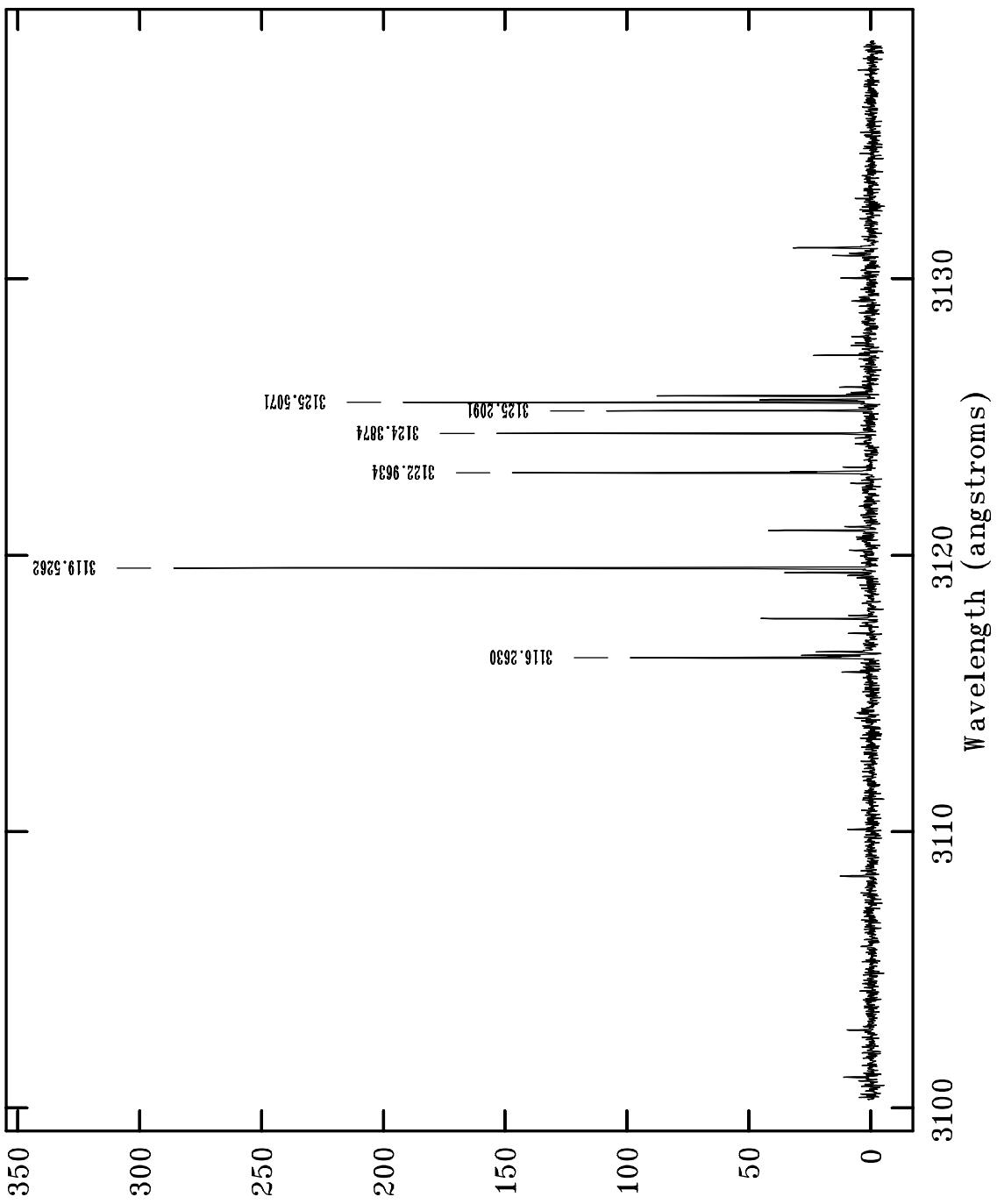
Echelle Order = 192

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 20:00:17 12-oct-2000
Aperture 31, Image line 31, Order 191
ecidentify 093: UNKNOWN



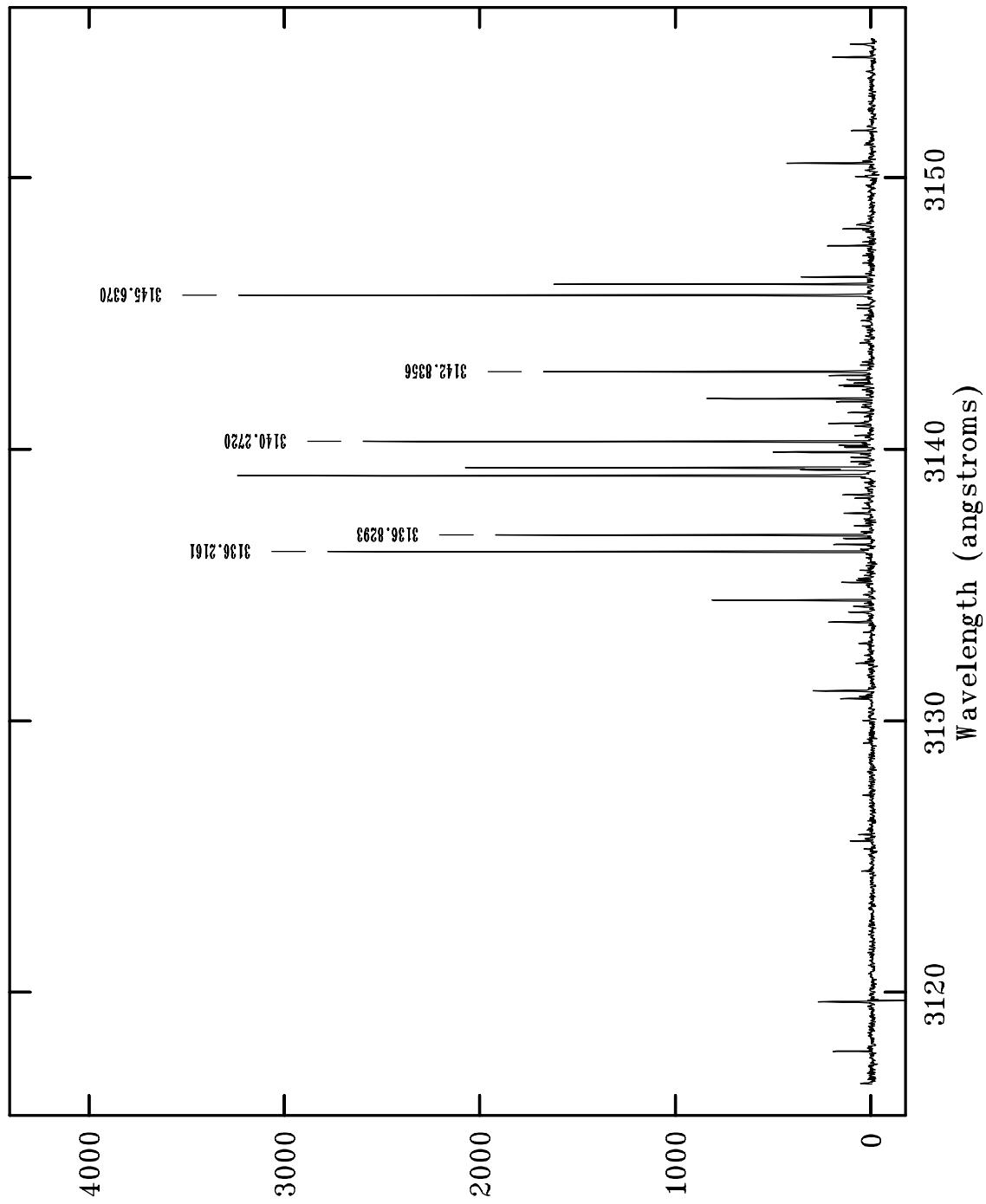
Echelle Order = 191

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:55:35 12-0ct-2000
Aperture 30, Image line 30, Order 190
ecidentify 093: UNKNOWN



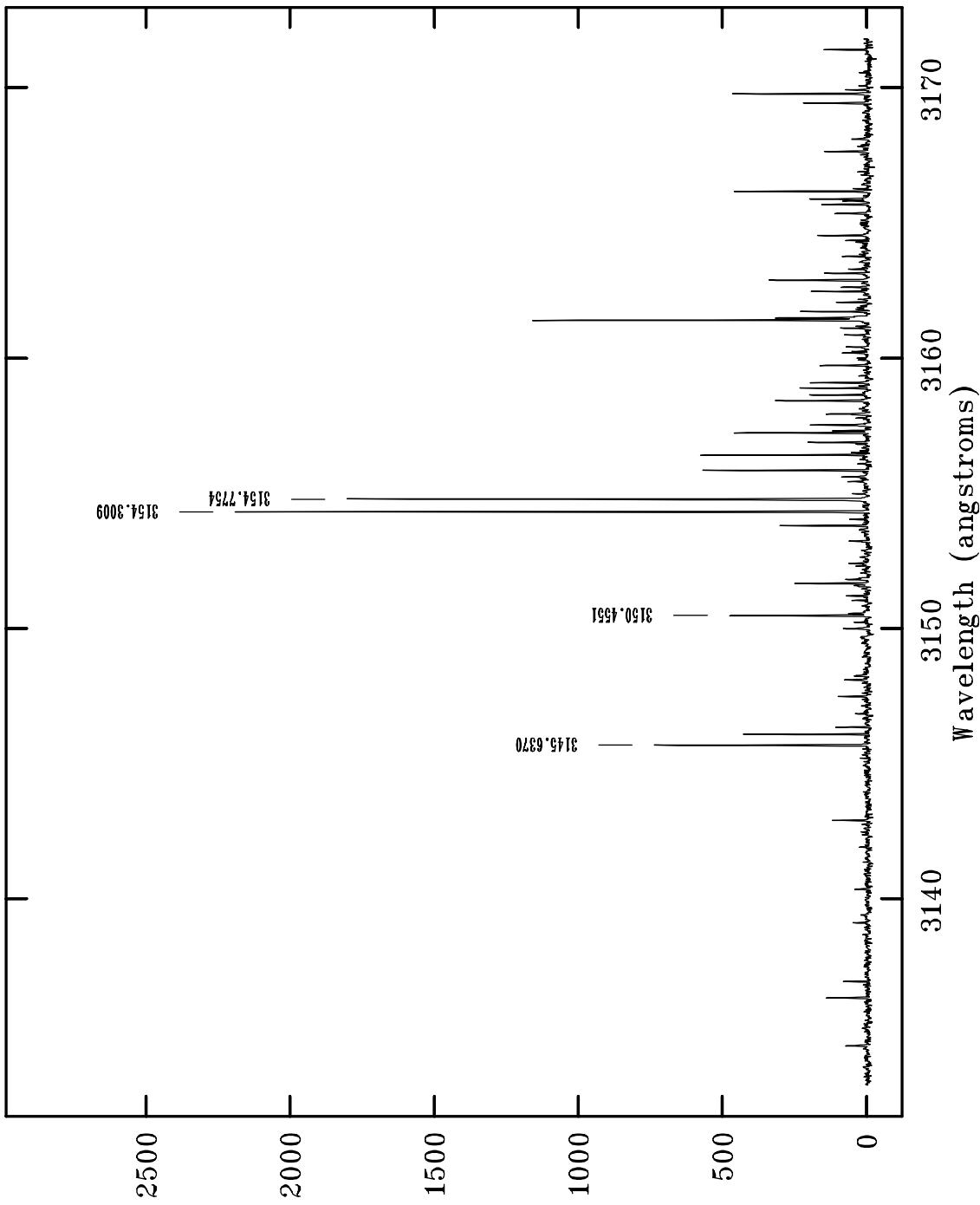
Echelle Order = 190

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:53:44 12-Oct-2000
Aperture 29, Image 29, Order 189
ecidentify 093: UNKNOWN



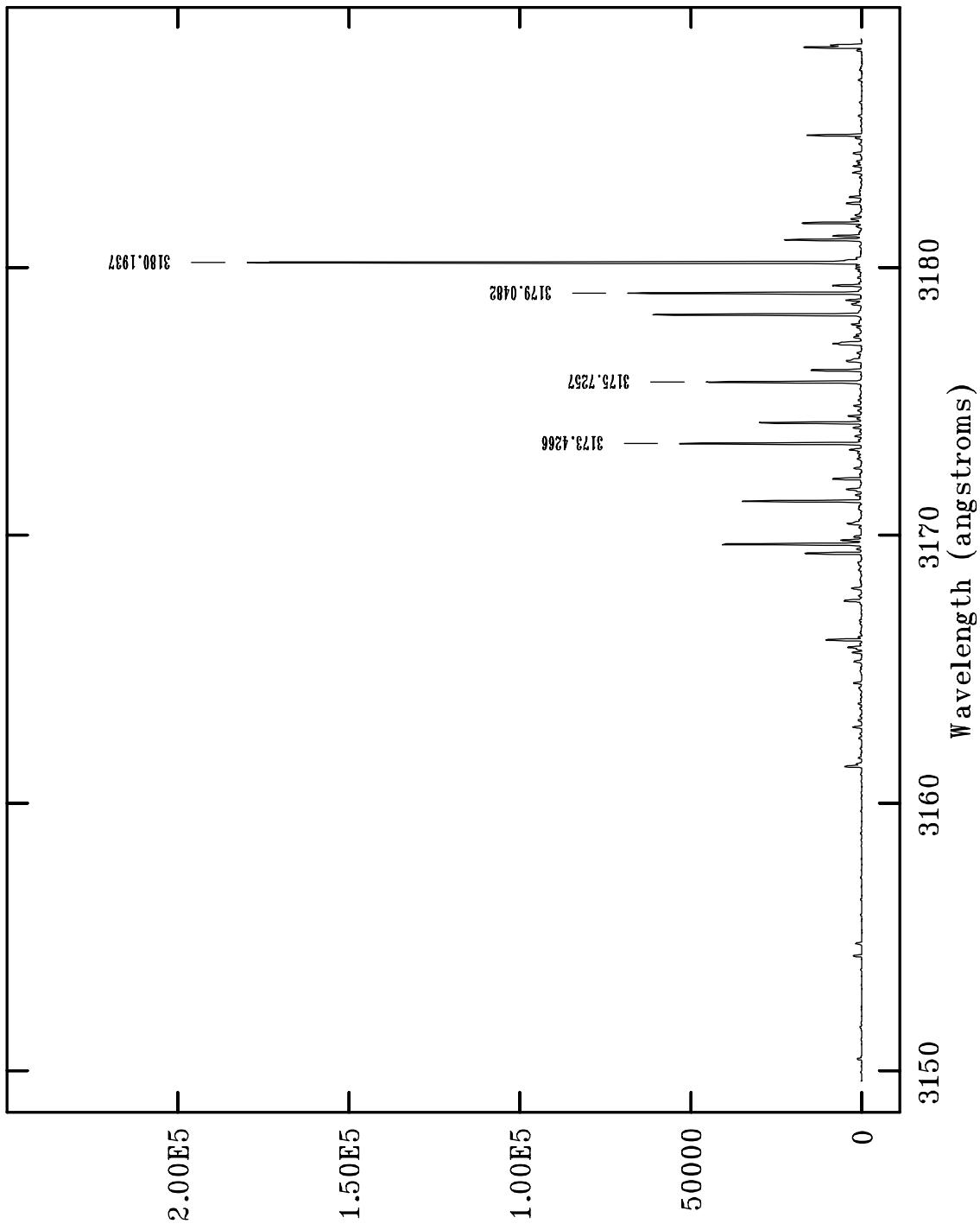
Echelle Order = 189

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:51:43 12-oct-2000
Aperture 28, Image line 28, Order 188
ecidentity 093: UNKNOWN



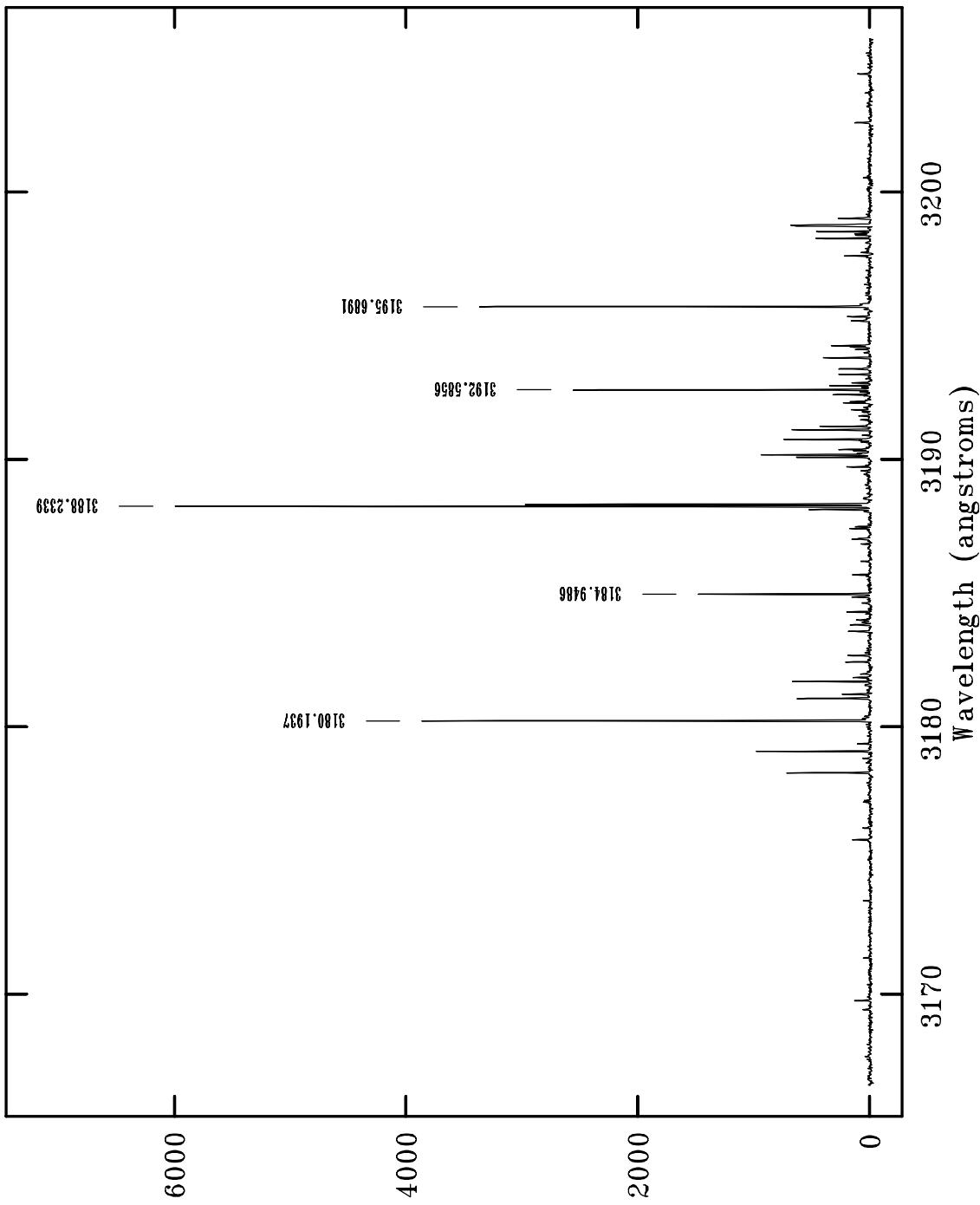
Echelle Order = 188

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 15:55:34 15-Feb-2001
Aperture 25, Image line 25, Order 188
ecidentify 0@30: COMPARISSON



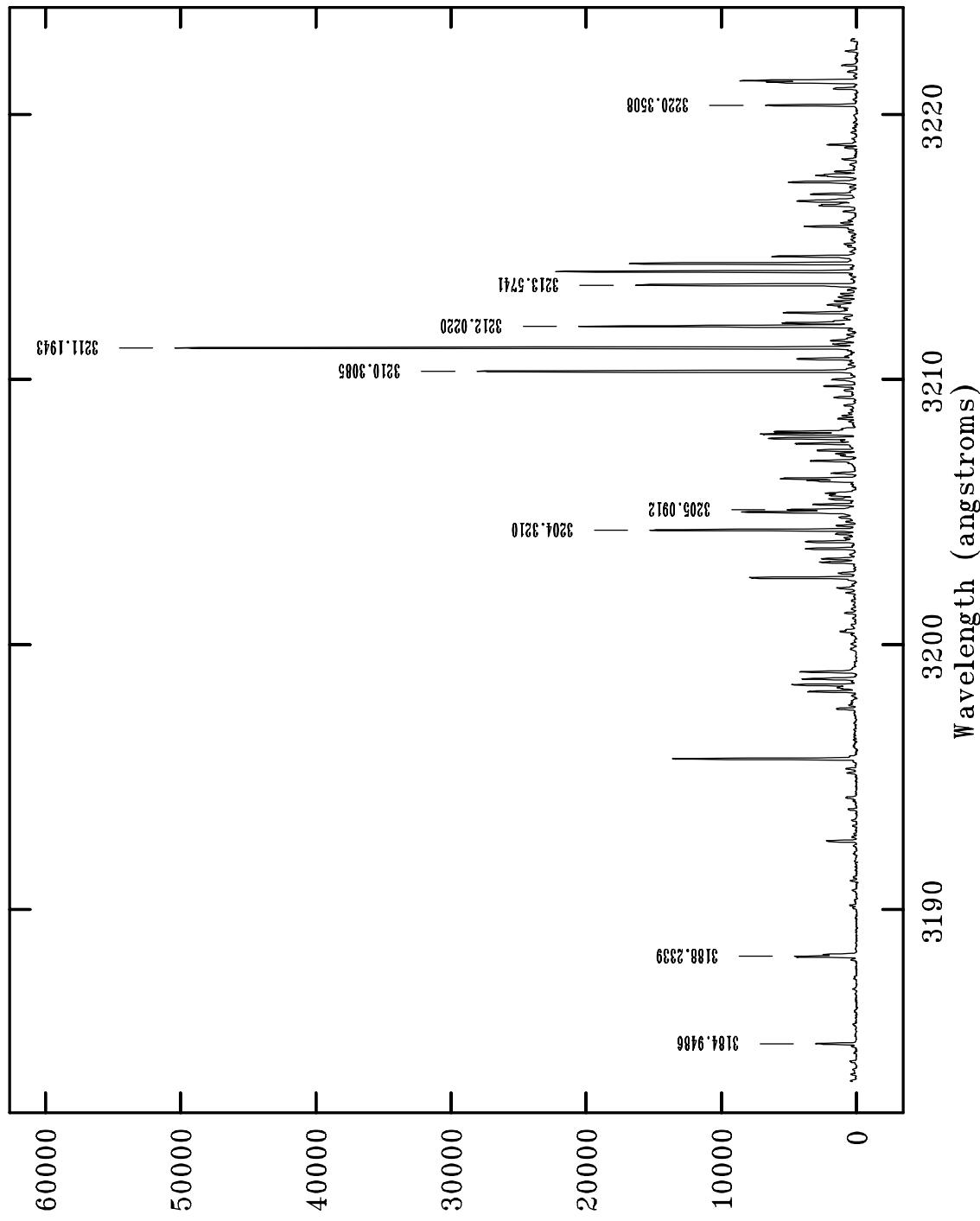
Echelle Order = 187

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:47:40 12-oct-2000
Aperture 26, Image line 26, Order 187
ecidify 093: UNKNOWN



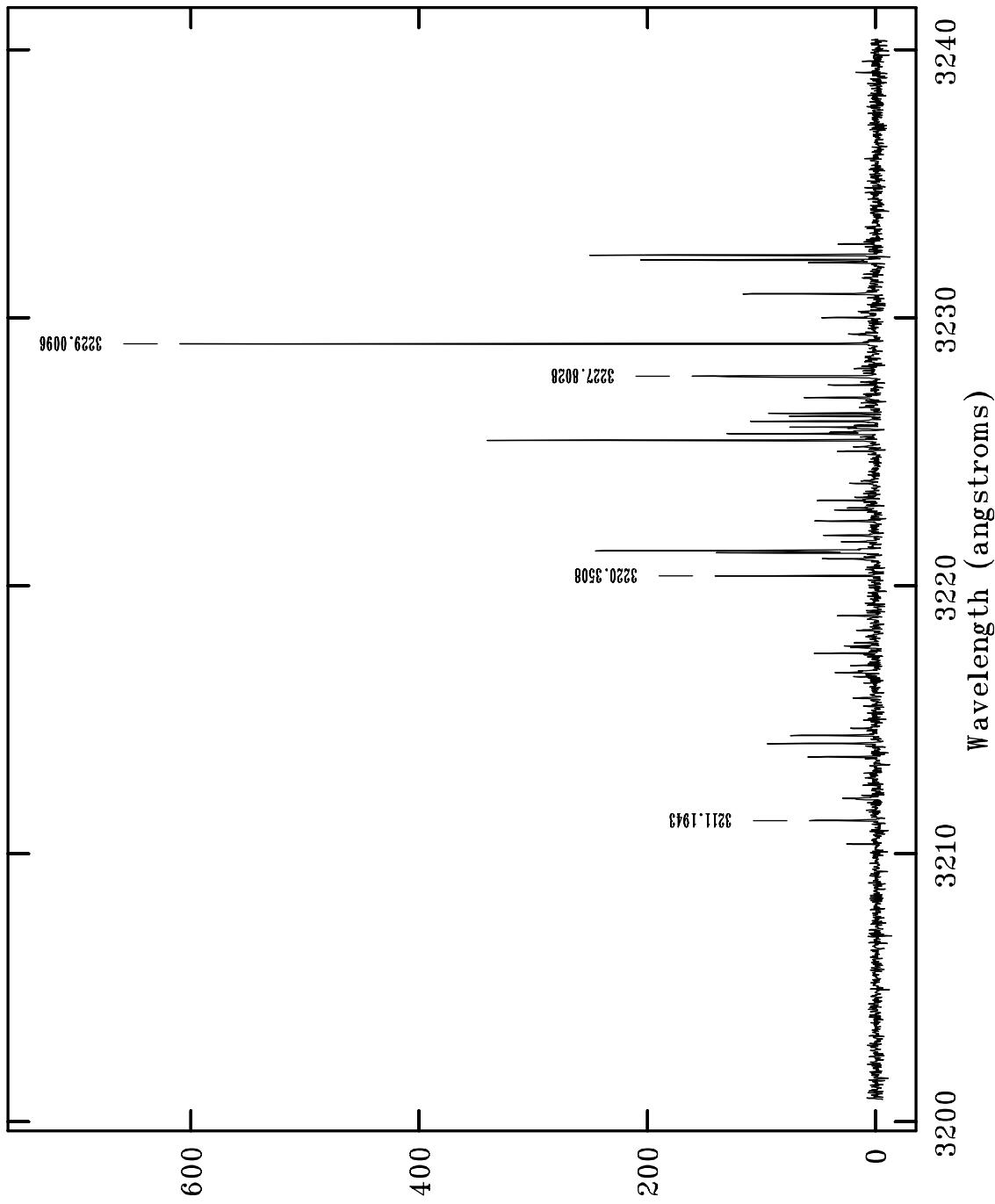
Echelle Order = 186

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 21:02:48 14-Feb-2001
Aperture 23, Image line 23, Order 186
identify 0@30: COMPARISSON



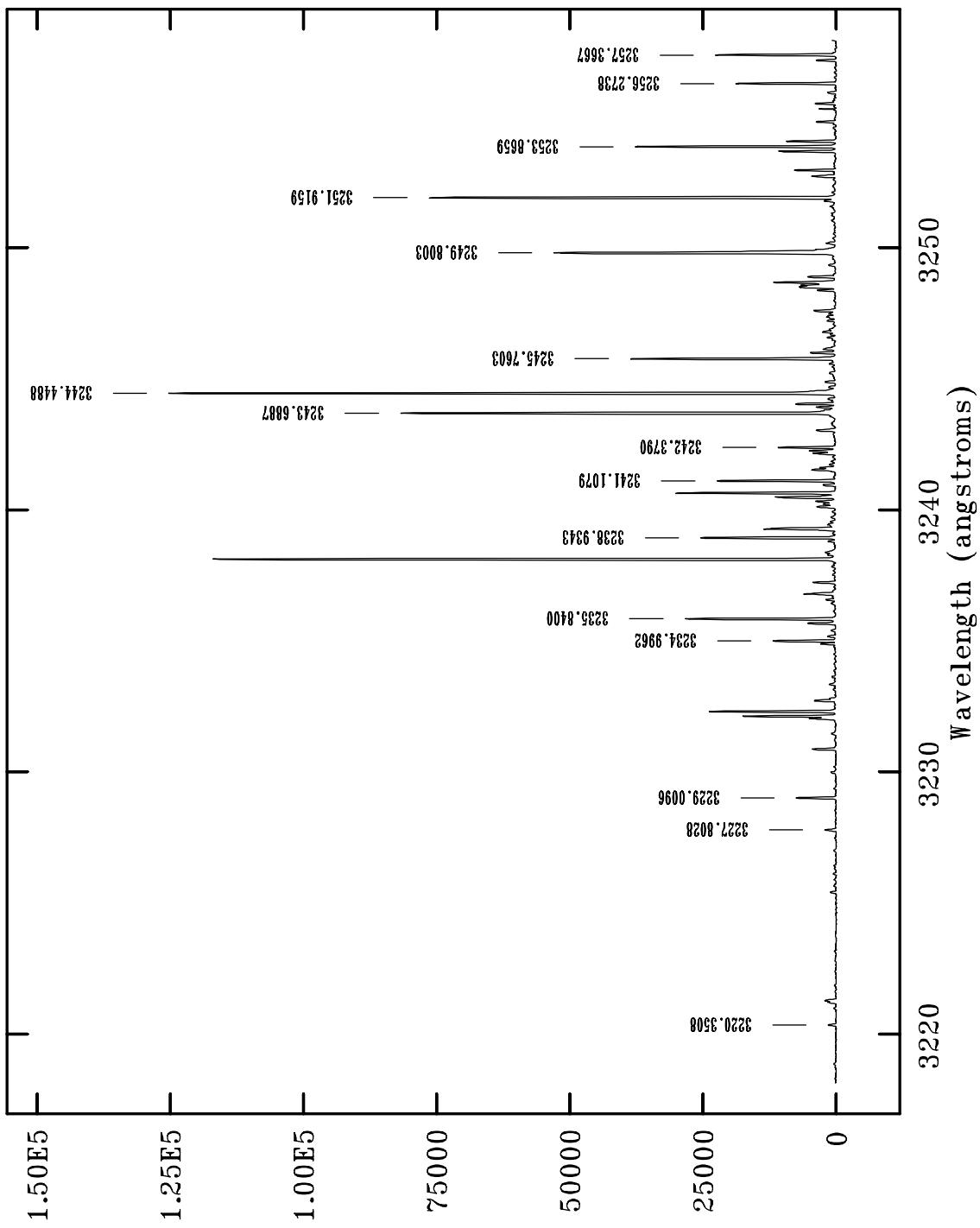
Echelle Order = 185

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:44:50 12-0ct-2000
Aperture 24, Image line 24, Order 184
ecidentify 093: UNKNOWN



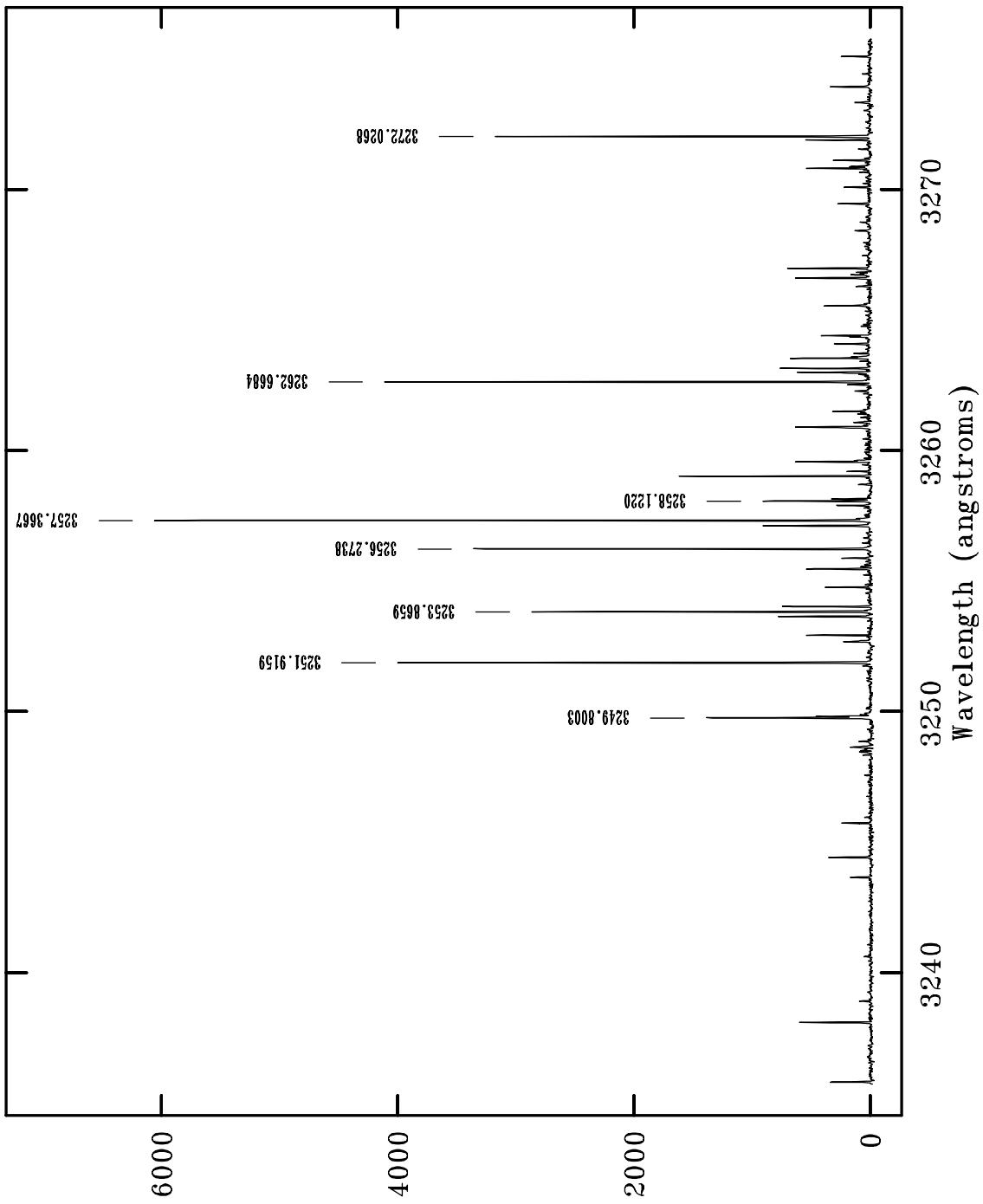
Echelle Order = 184

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 20:59:03 14-Feb-2001
Aperture 21, Image line 21, Order 184
ecidentify 0@30: COMPÁRISON



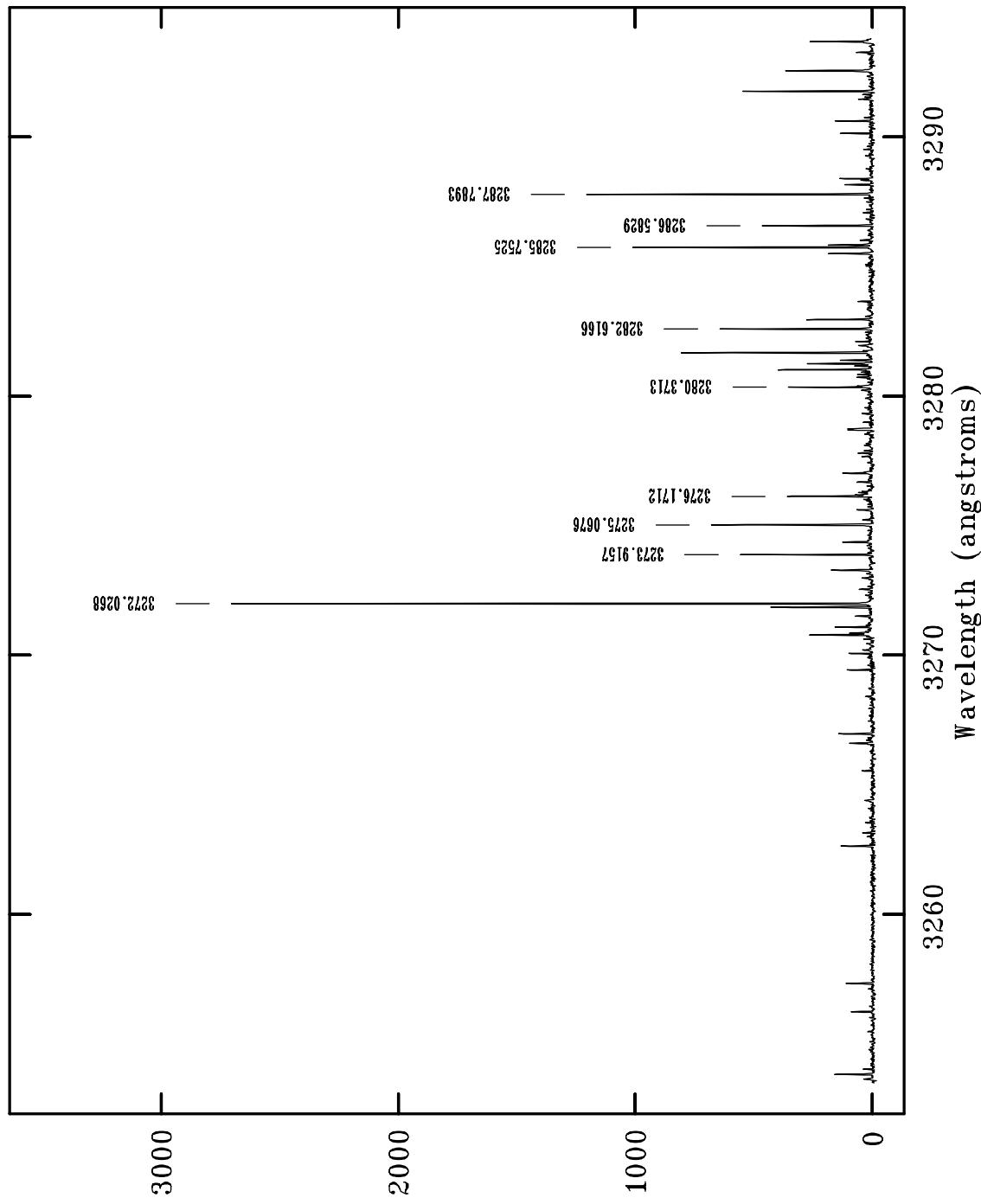
Echelle Order = 183

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:38:34 12-0ct-2000
Aperture 22, Image line 22, Order 183
ecidify 093: UNKNOWN



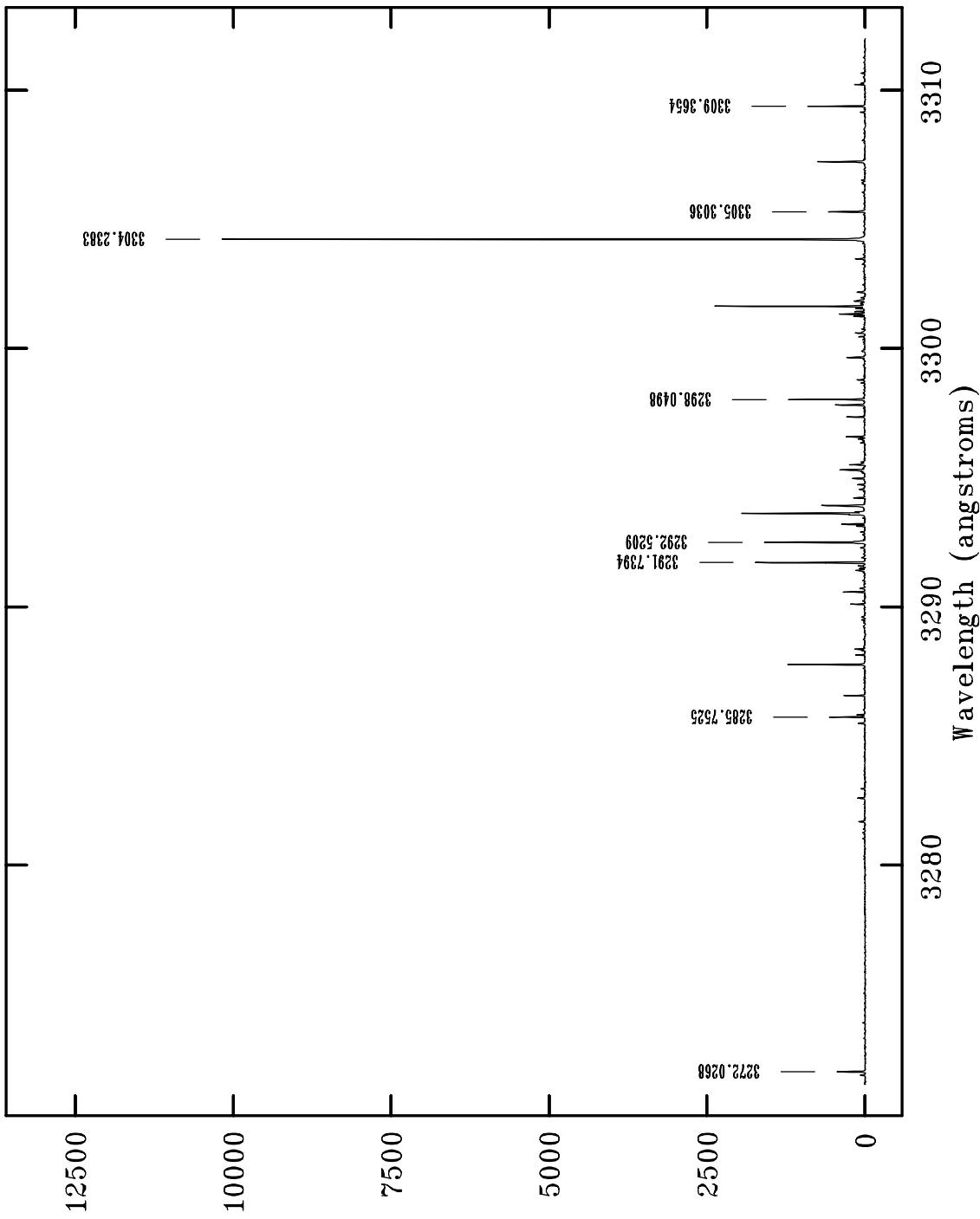
Echelle Order = 182

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:37:24 12-Oct-2000
Aperture 21, Image line 21, Order 182
ecidentry 093: UNKNOWN



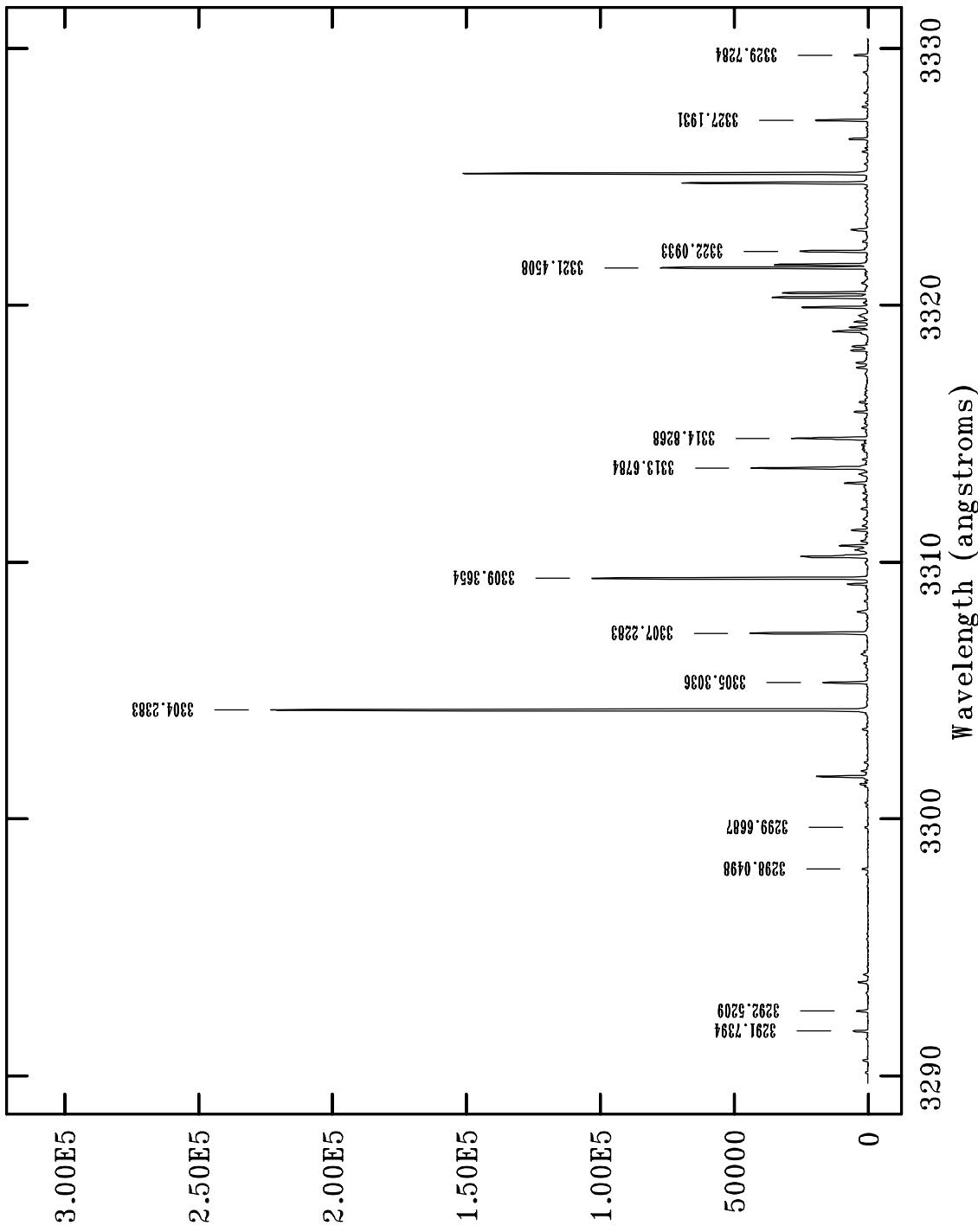
Echelle Order = 181

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:35:25 12-0ct-2000
Aperture 20, Image line 20, Order 181
ecidentify 093: UNKNOWN



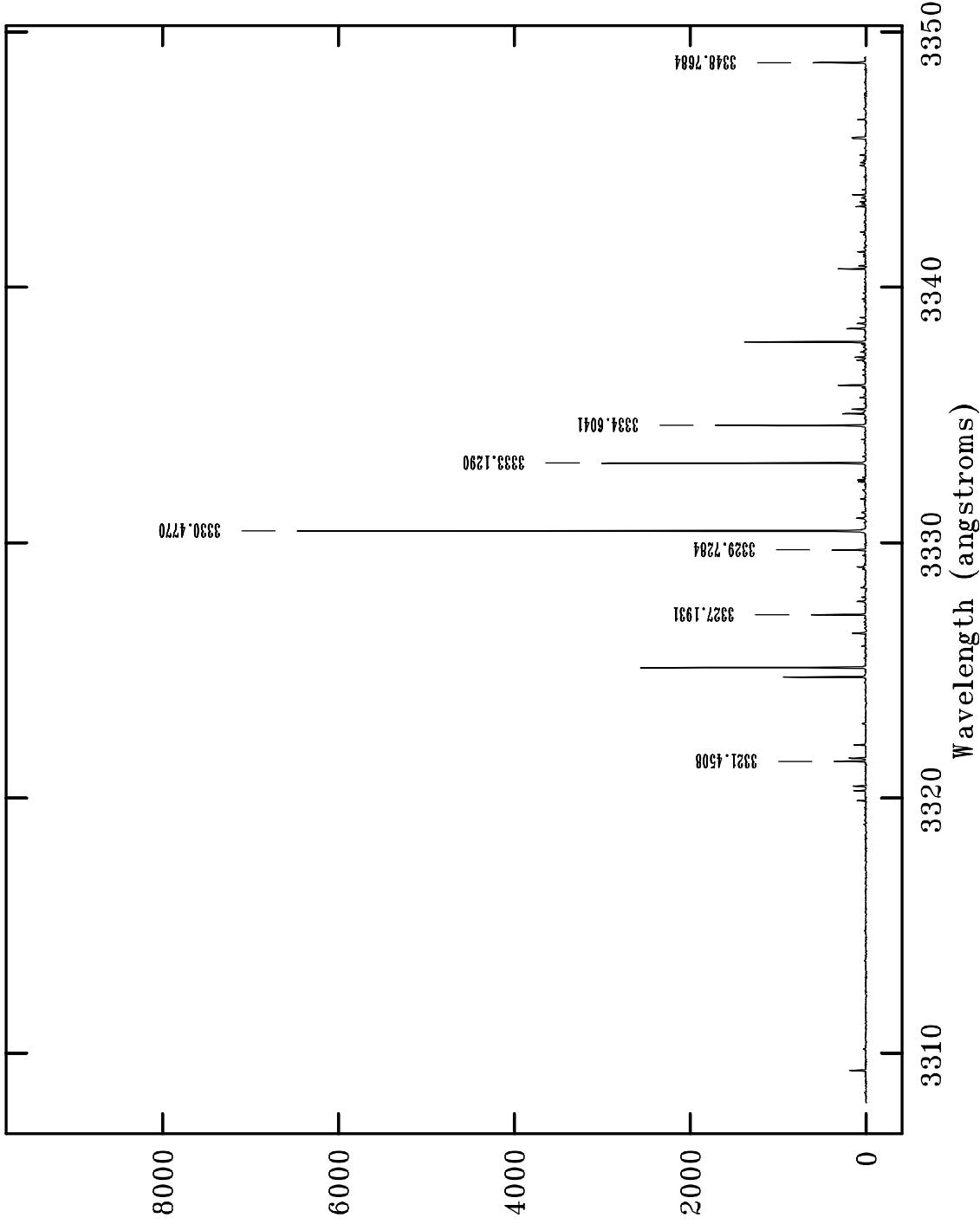
Echelle Order = 180

NOAO / IRAF V2.11EXPORT honda@data Fri 23:37:58 19-Jan-2001
Aperture 17 Image line 17 Order 180
identify 093: COMPARISON



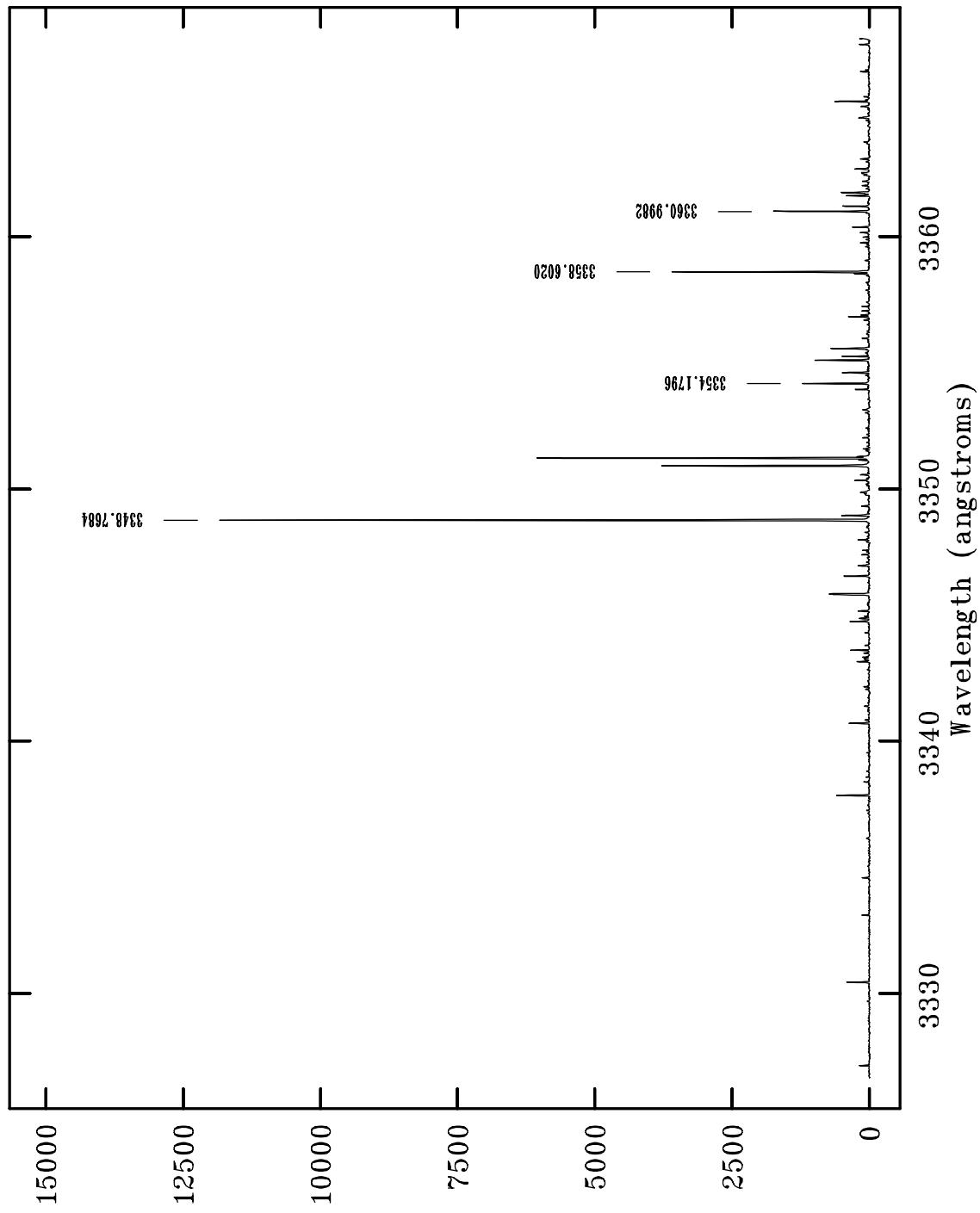
Echelle Order = 179

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:33:42 12-0ct-2000
Aperture 18, Image Line 18, Order 179
identify 093: UNKNOWN



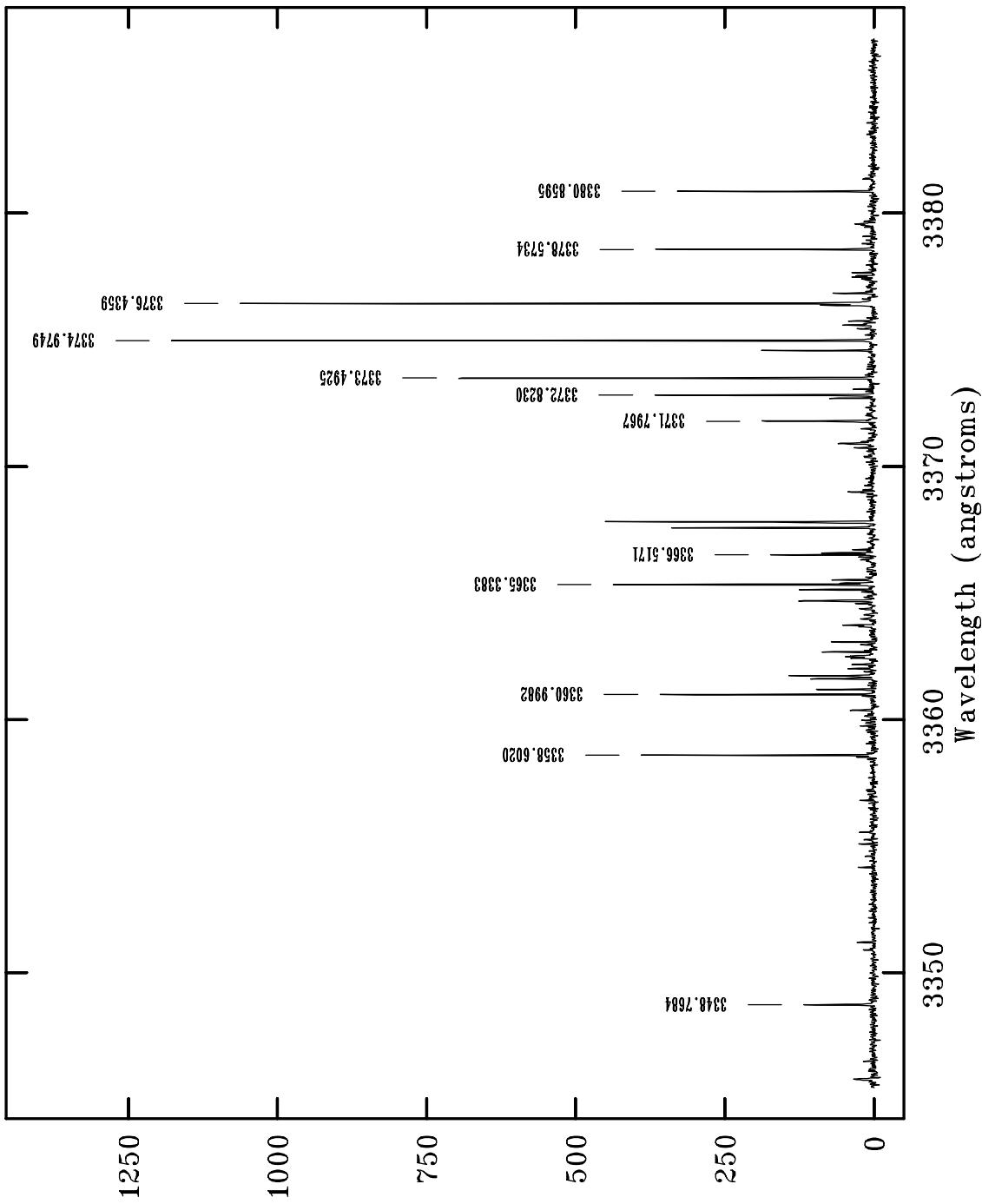
Echelle Order = 178

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:27:25 12-oct-2000
Aperture 17, Image line 17, Order 178
ecidentity 093: UNKNOWN



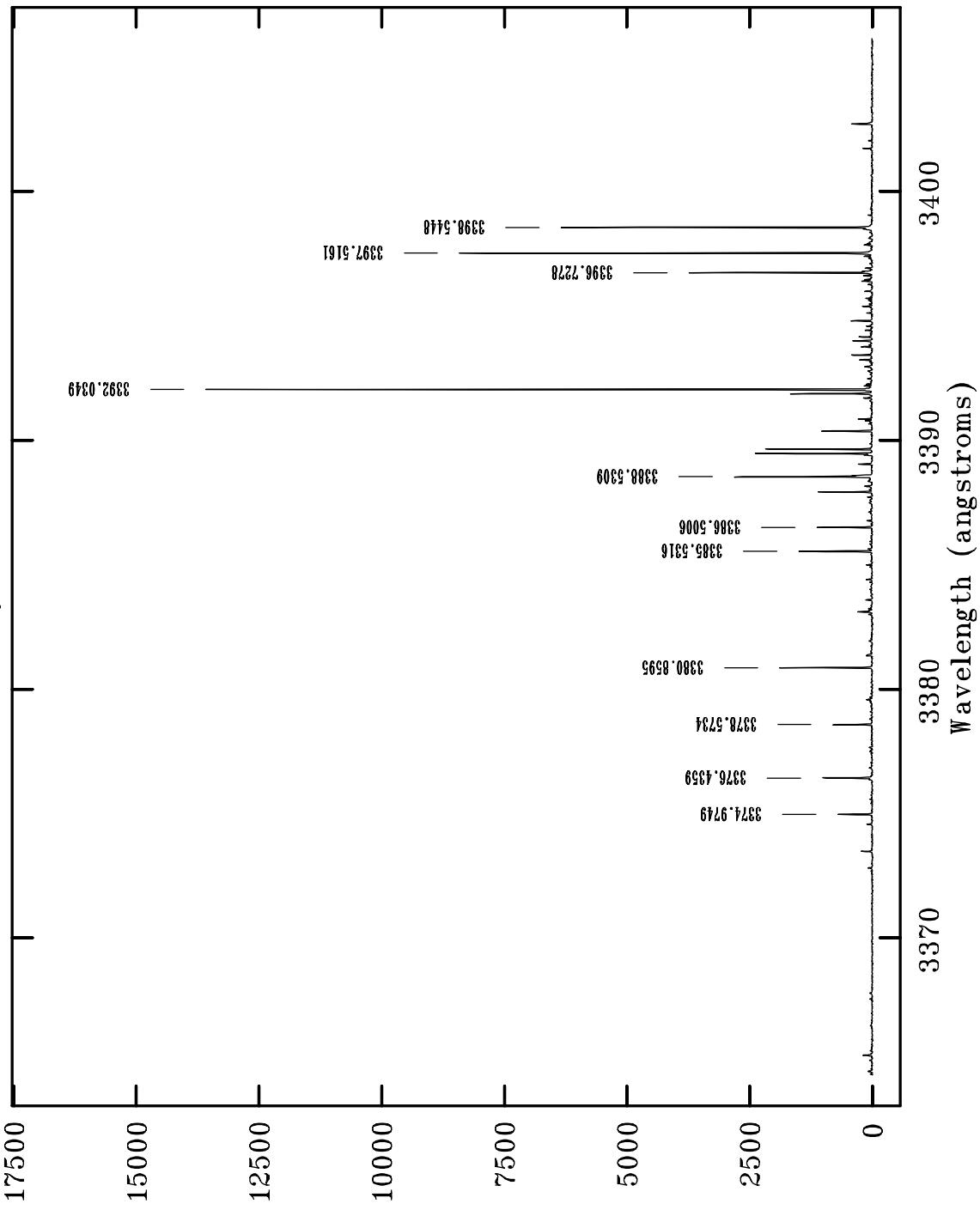
Echelle Order = 177

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:26:35 12-0ct-2000
Aperture 16, Image Line 16, Order 177
ecidify 093: UNKNOWN



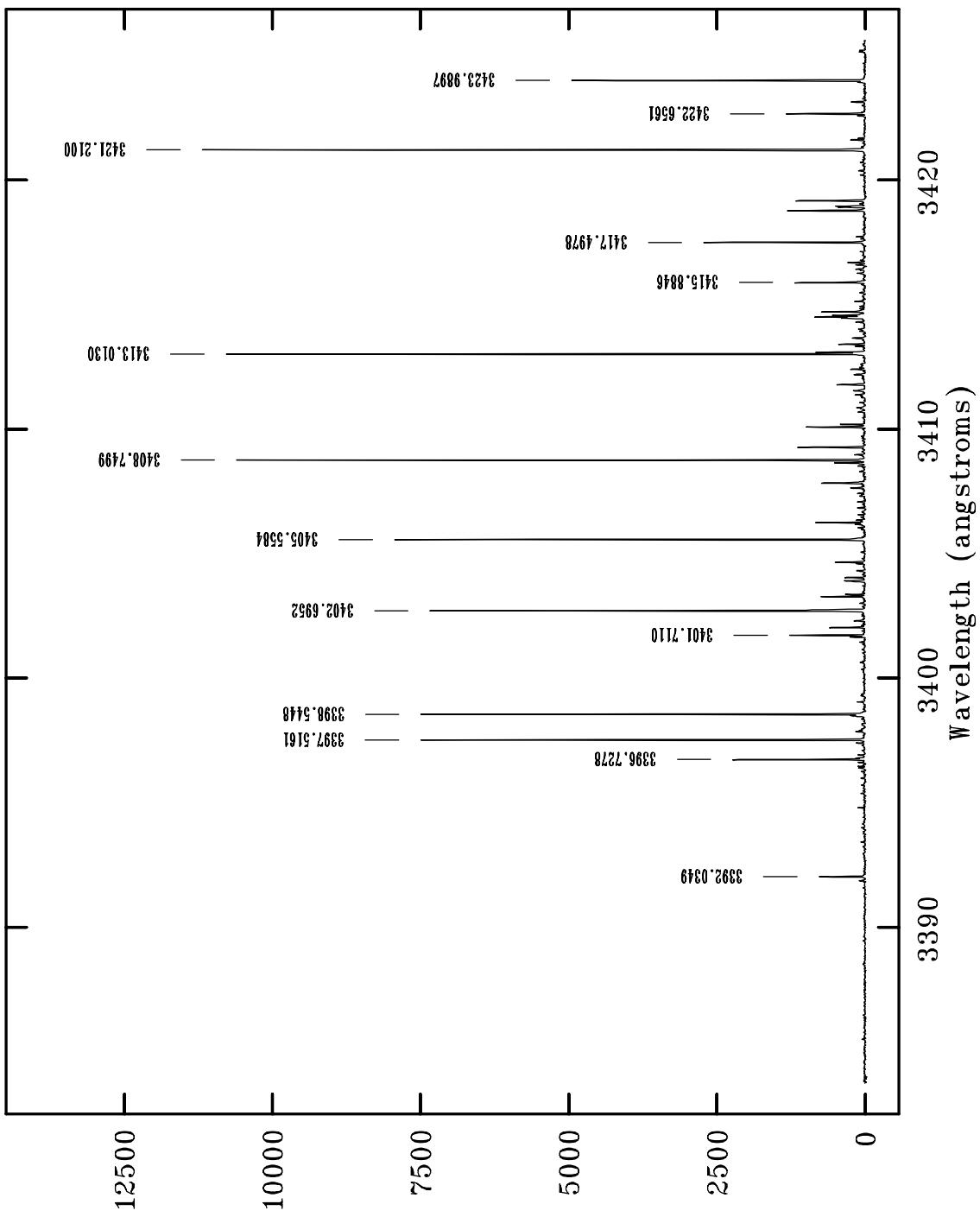
Echelle Order = 176

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:23:40 12-Oct-2000
Aperture 15, Image line 15, Order 176
ecidentity 093: UNKNOWN



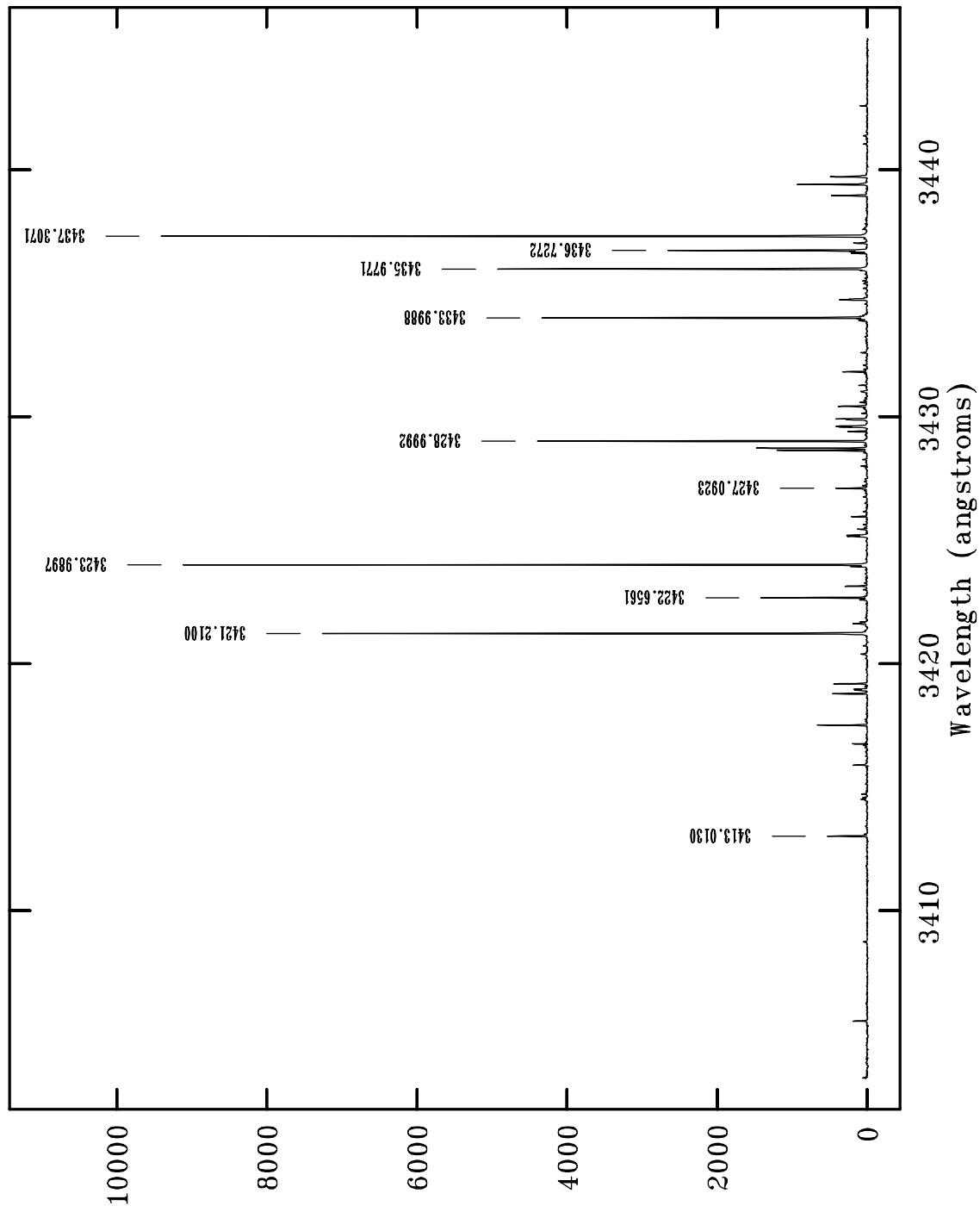
Echelle Order = 175

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:22:36 12-0ct-2000
Aperture 14, Image Line 14, Order 175
identify 093: UNKNOWN



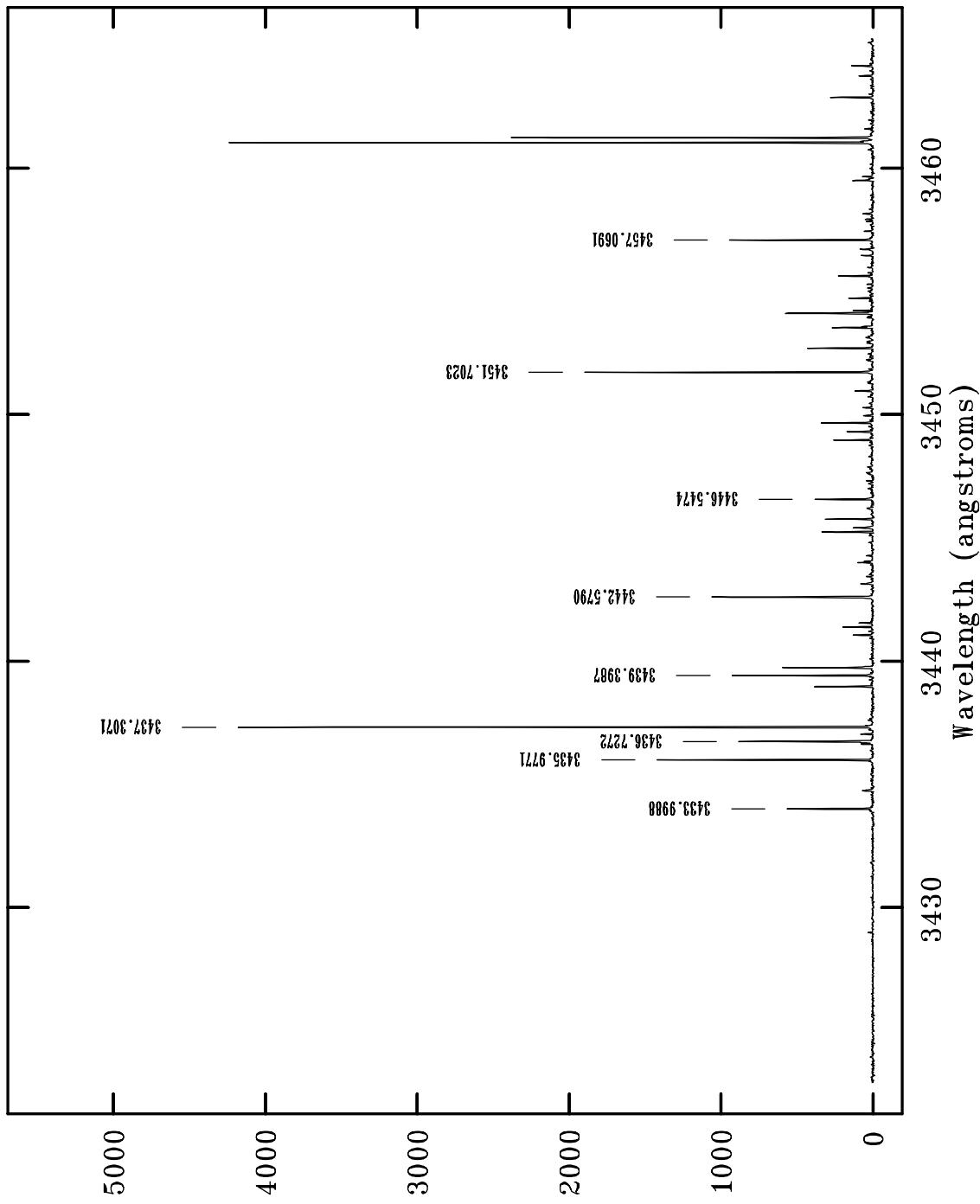
Echelle Order = 174

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:20:59 12-Oct-2000
Aperture 13, Image 13, Order 174
ecidentify 093: UNKNOWN



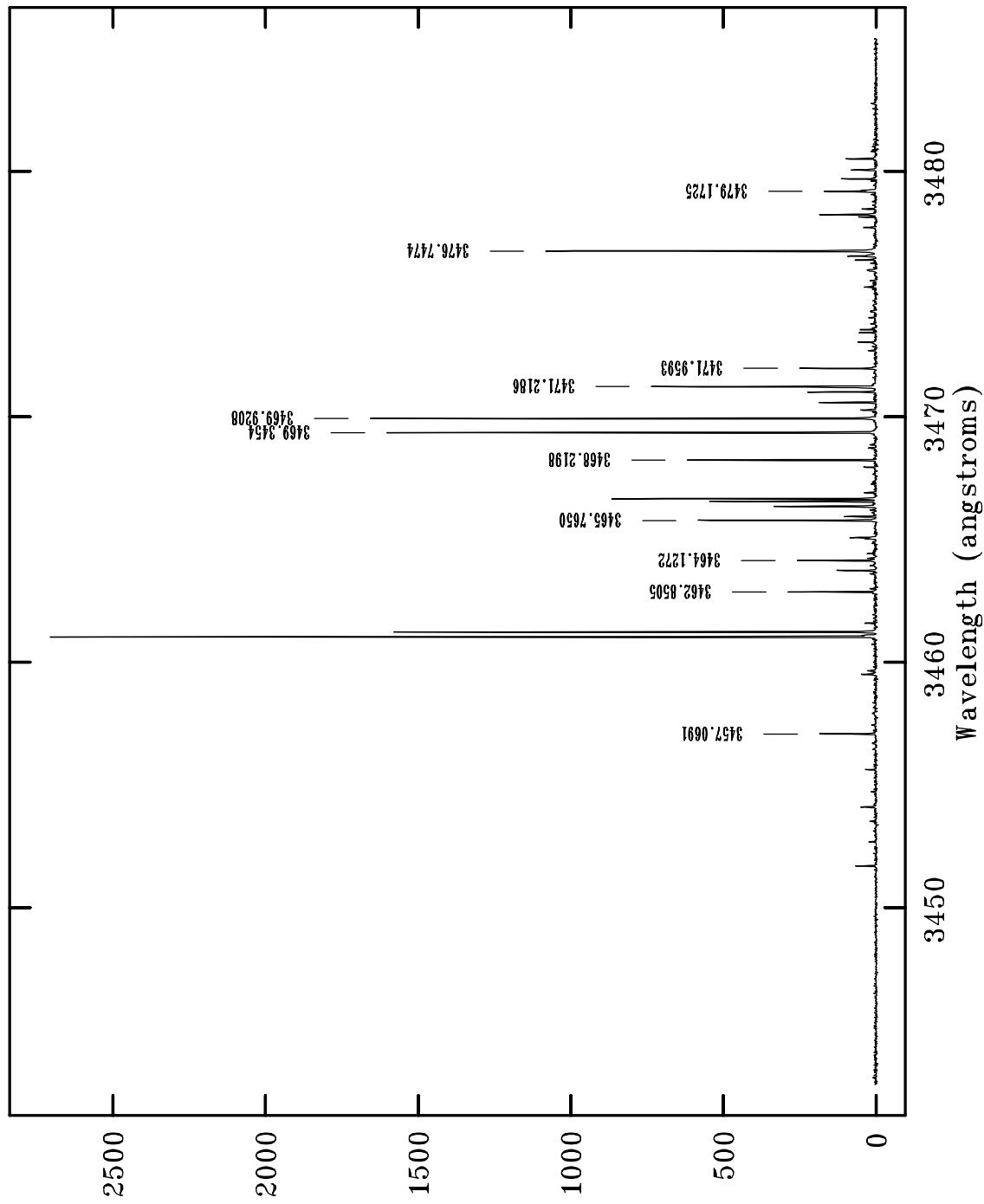
Echelle Order = 173

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 19:20:33 12-0ct-2000
Aperture 12, Image Line 12, Order 173
identify 093: UNKNOWN



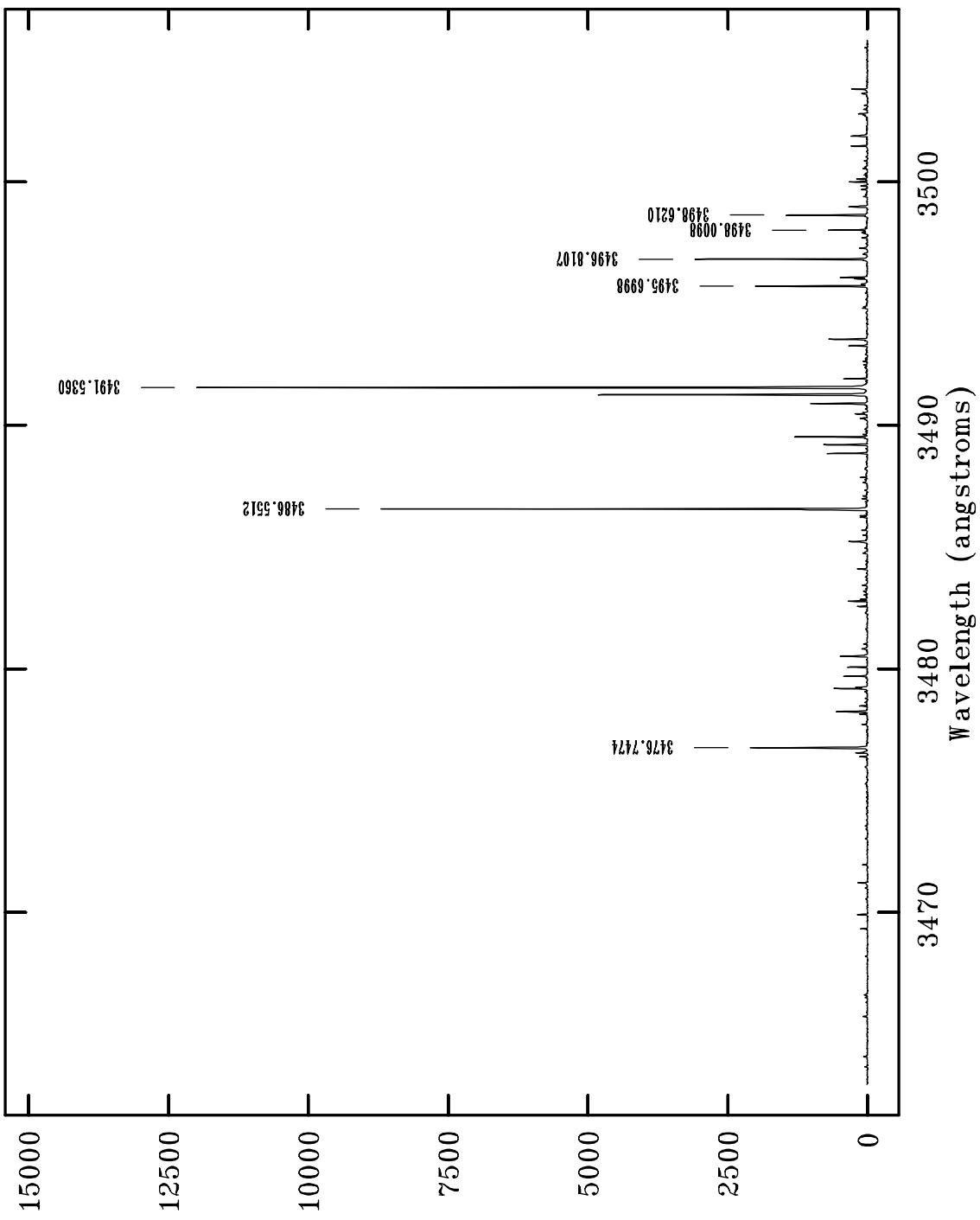
Echelle Order = 172

NOAO/IRAF V2.11.3EXPORT honda@hds Thu 19:19:12 12-Oct-2000
Aperture 11, Image line 11 Order 172
ecidentry 093: UNKNOWN



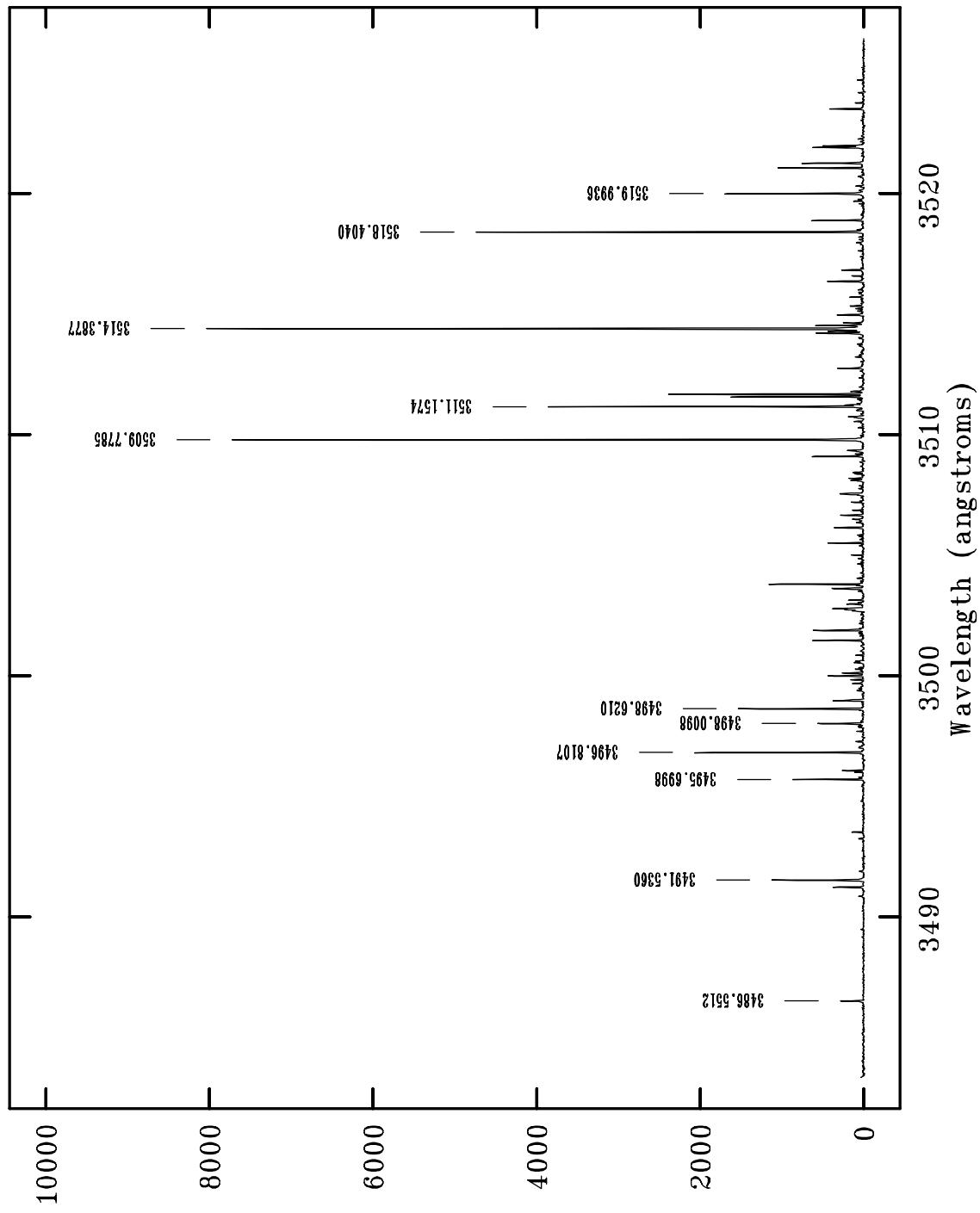
Echelle Order = 171

NOAO/IRAF V2.11.3EXPORT honda@hds Thu 19:16:10 12-oct-2000
Aperture 10, Image line 10, Order 171
ecidify 093: UNKNOWN



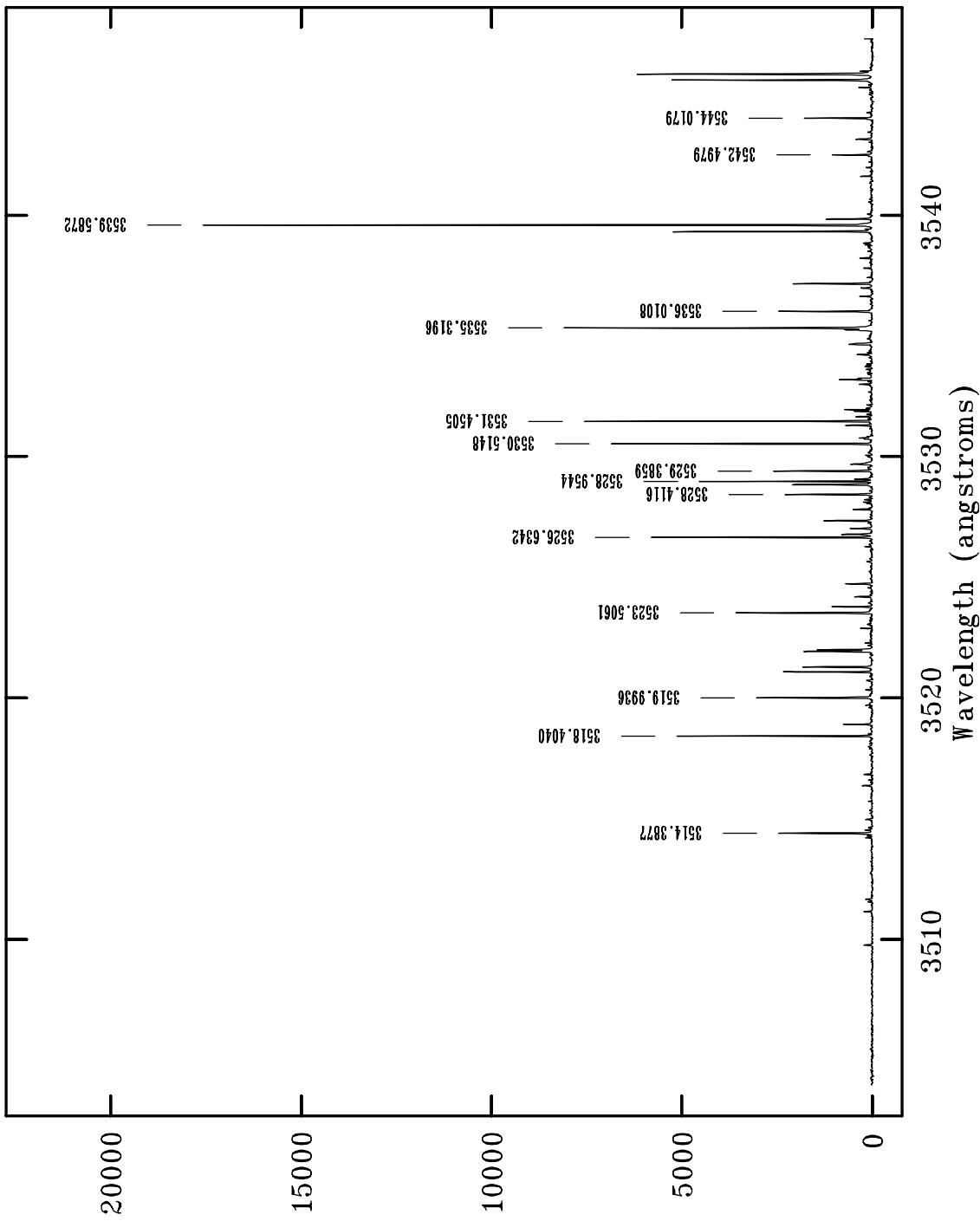
Echelle Order = 170

NOAO/IRAF V2.11.3EXPORT honda@hds Thu 18:51:47 12-Oct-2000
Aperture 9, Image line 9, Order 170
identify 093: UNKNOWN



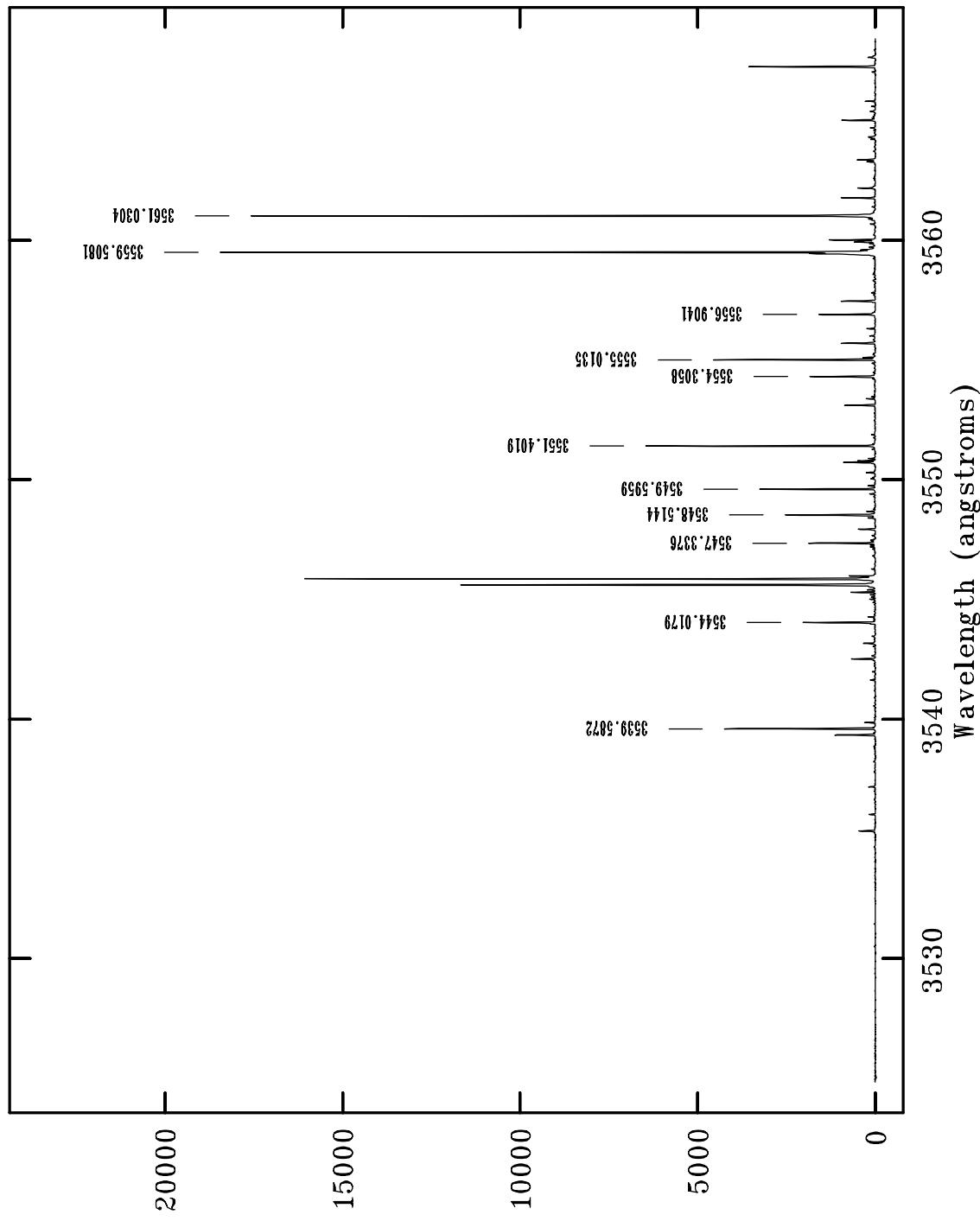
Echelle Order = 169

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 18:49:26 12-0ct-2000
Aperture 8, Image Line 8, Order 169
ecidentify 093: UNKKNOWN



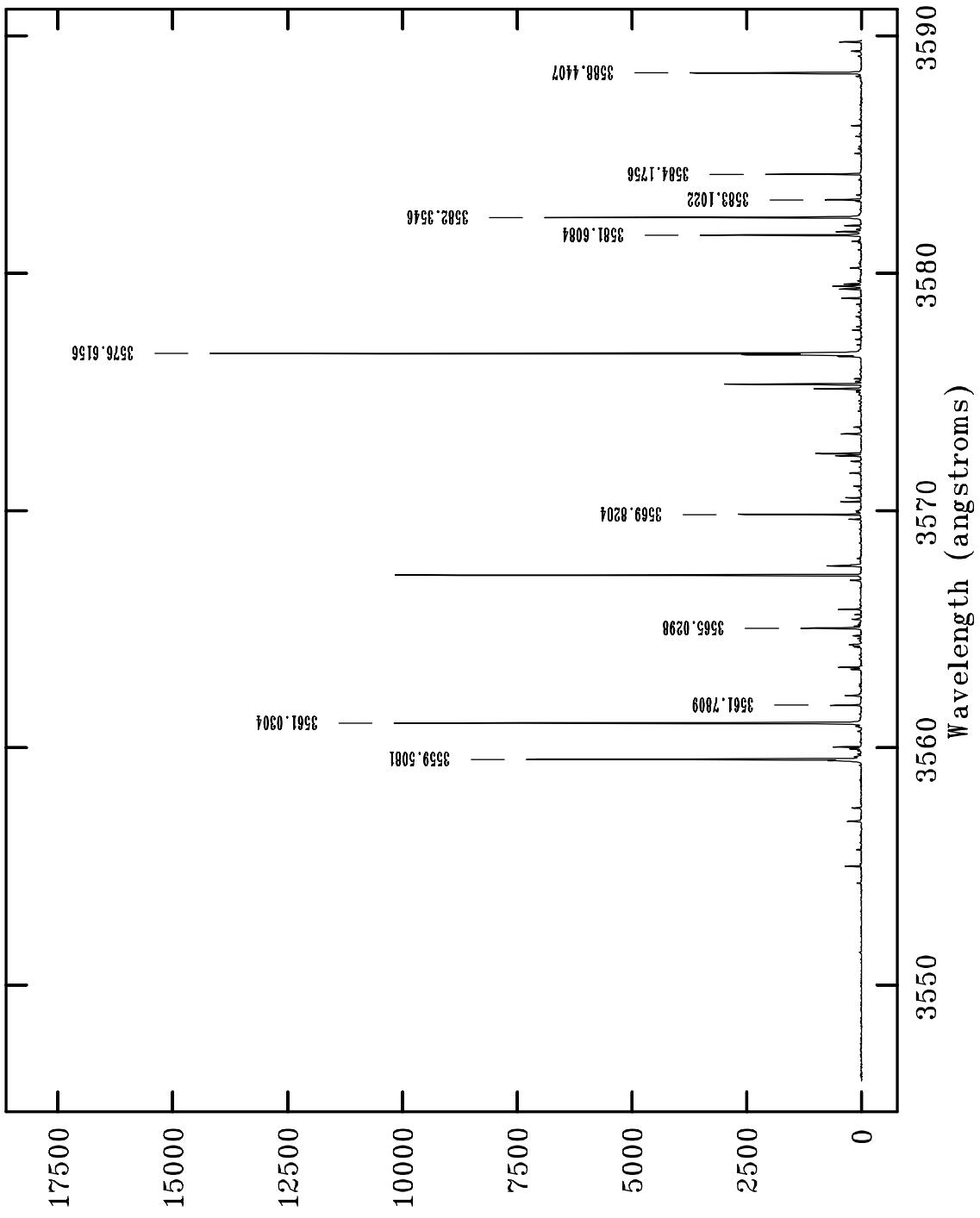
Echelle Order = 168

NOAO/IRAF V2.11.3EXPORT honda@hds Thu 18:48:41 12-Oct-2000
Aperture 7, Image line 7 Order 168
ecidify 093: UNKNOWN



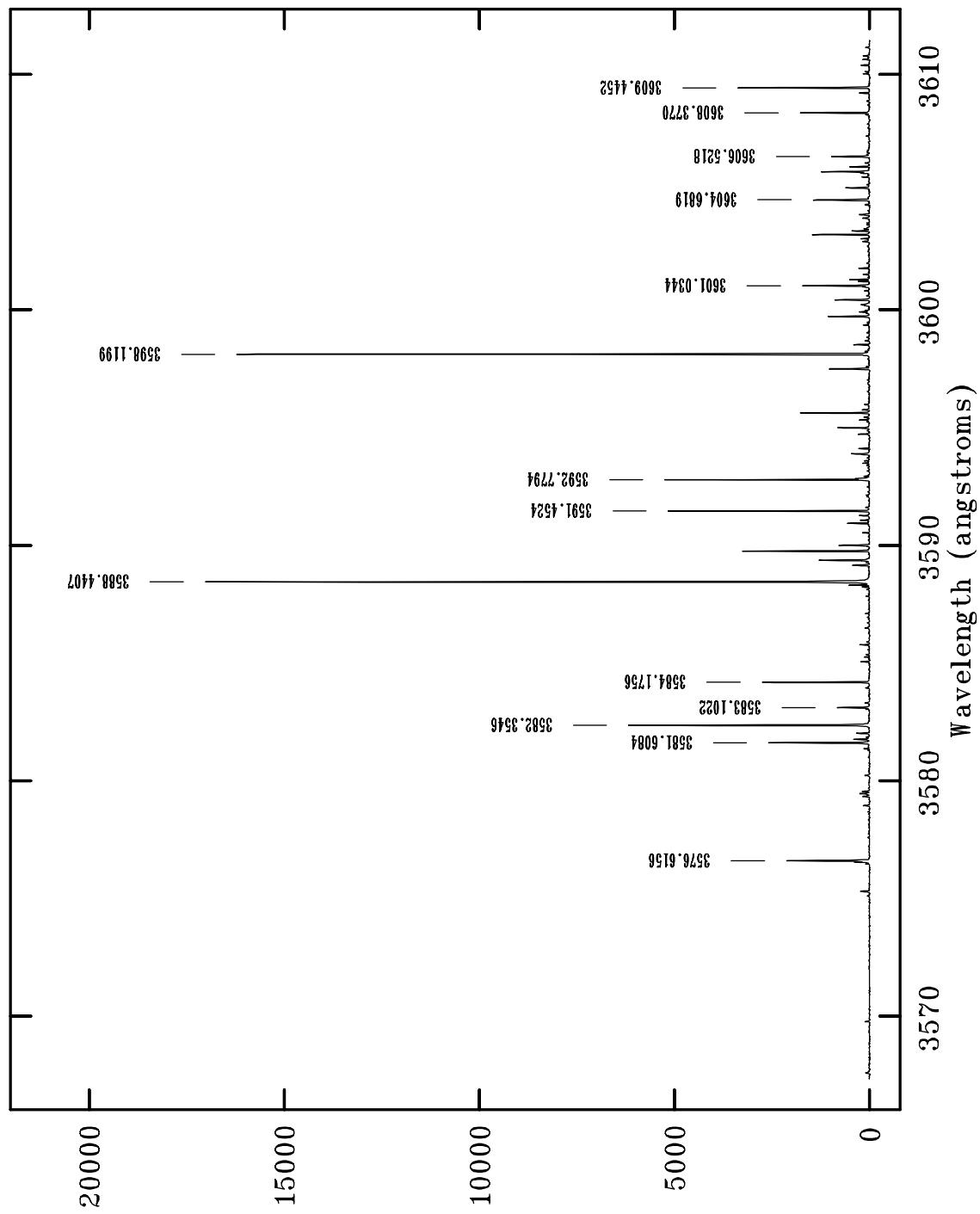
Echelle Order = 167

NOAO / IRAF V2.11.3EXPORT honda@hds Aperture 6, Image Line 6, Order 167
ecidentify 093: UNKNOWN



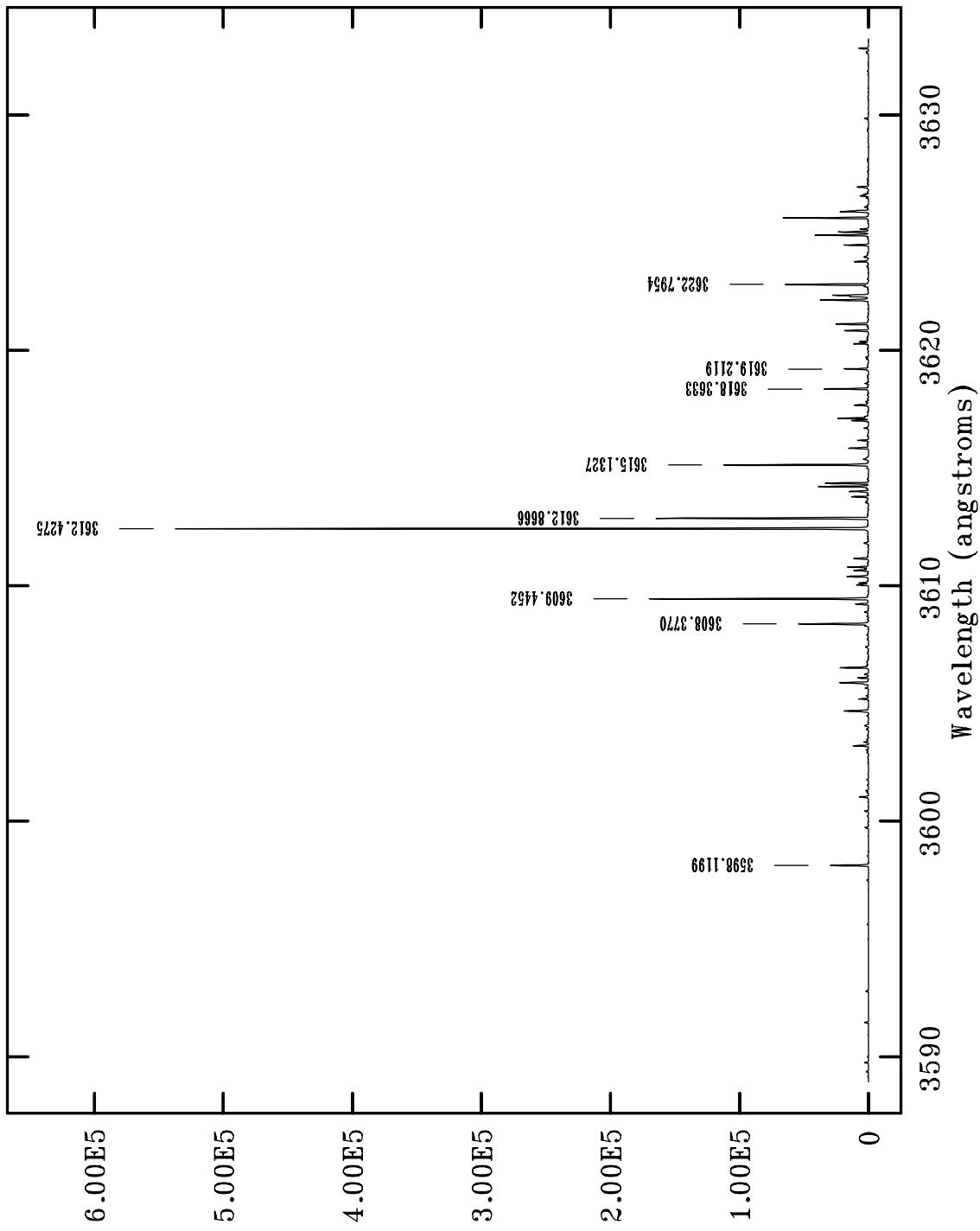
Echelle Order = 166

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 18:47:20 12-Oct-2000
Aperture 5, Image line 5, Order 166
ecidentify 093: UNKNOWN



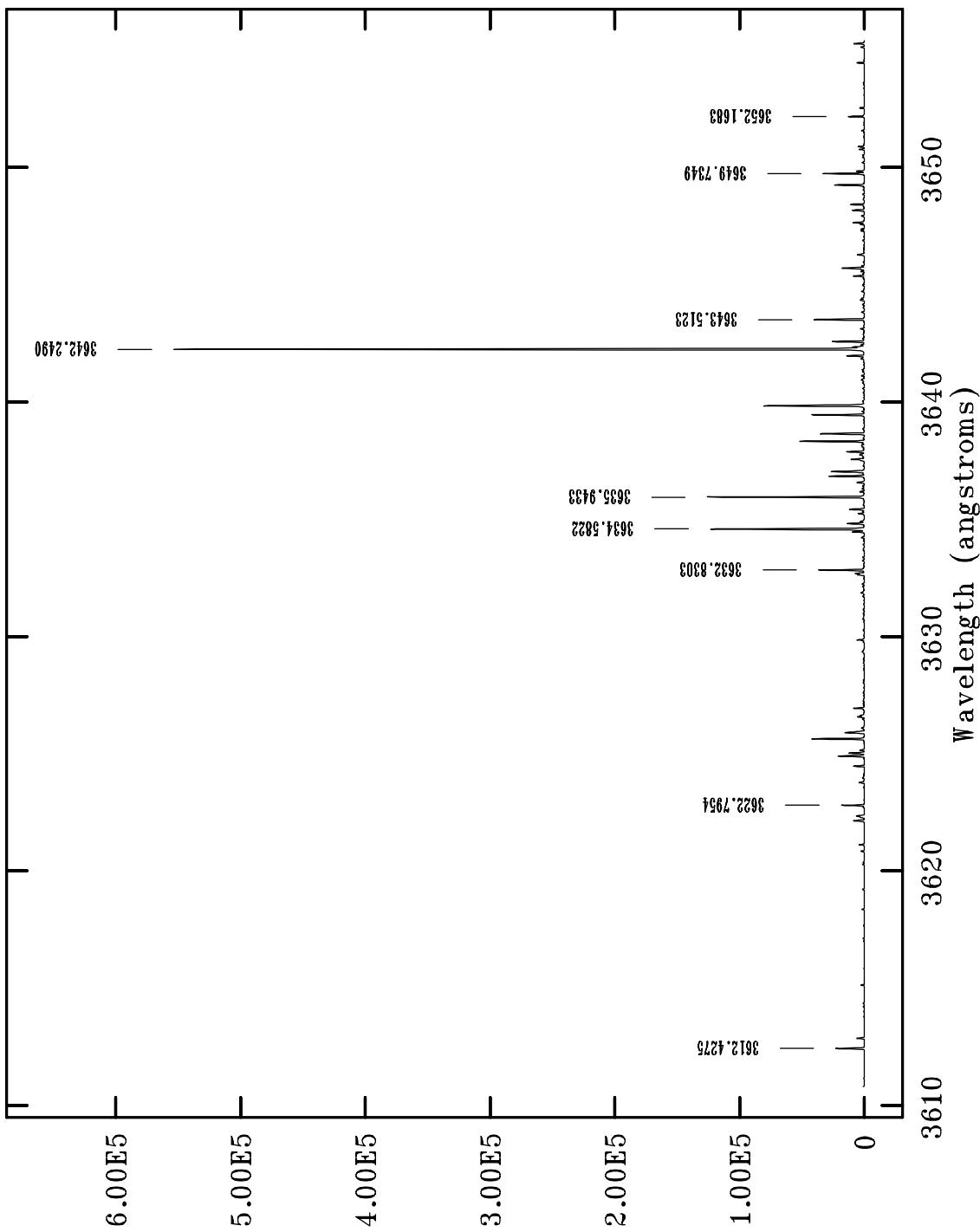
Echelle Order = 165

NOAO/IRAF V2.11EXPORT honda@data Wed 18:03:39 13-Dec-2000
Aperture 25, Image line 25, Order 165
ecidentity eci456: COMPARISON



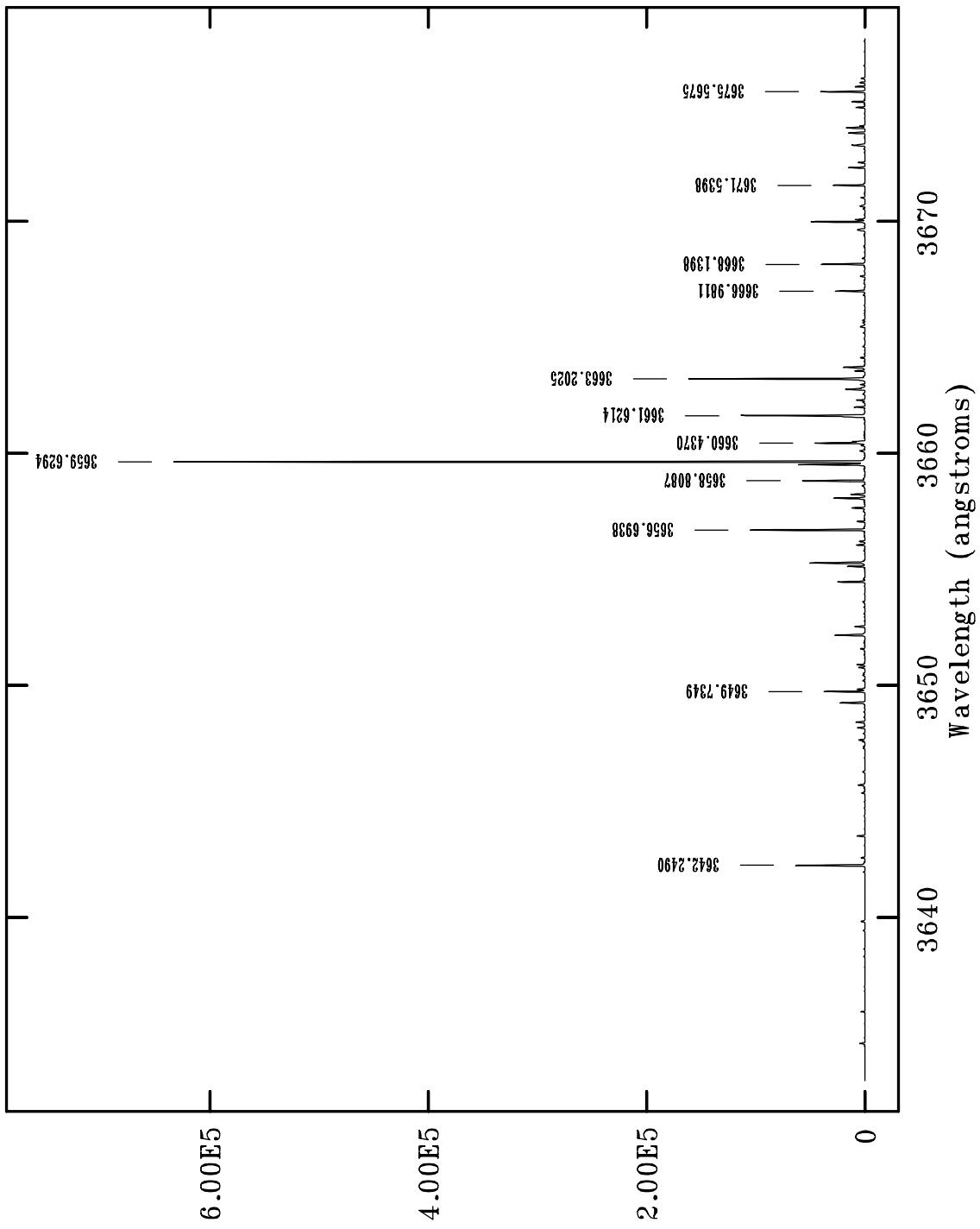
Echelle Order = 164

NOAO / IRAF V2.11EXPORT honda@data Wed 18:02:17 13-Dec-2000
Aperture 24, Image line 24, Order 164
ec1456: COMPARISON
identify



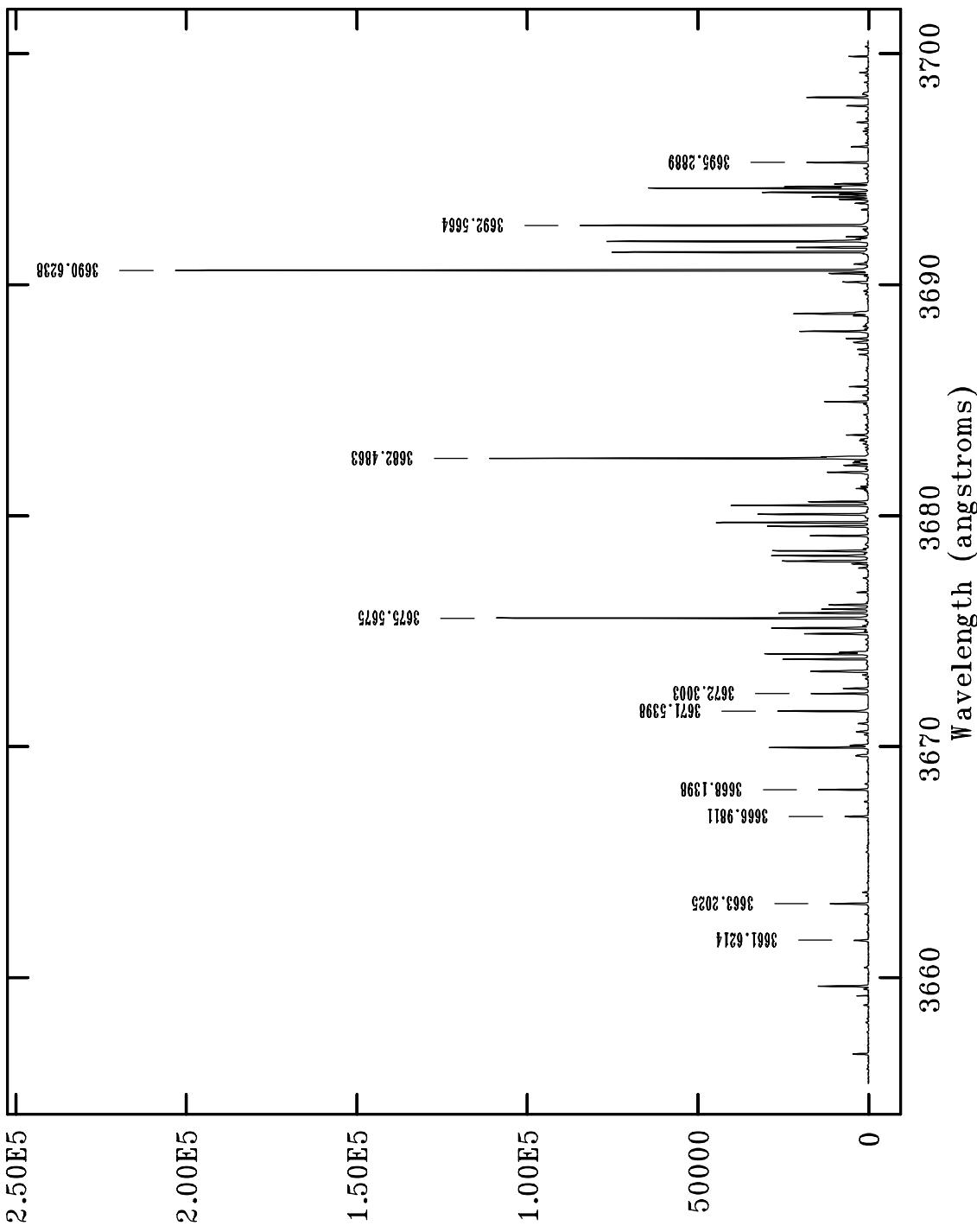
Echelle Order = 163

NOAO/IRAF V2.11EXPORT honda@data Wed 18:00:46 13-Dec-2000
Aperture 23, Image line 23, Order 163
identify eci456: COMPARISON



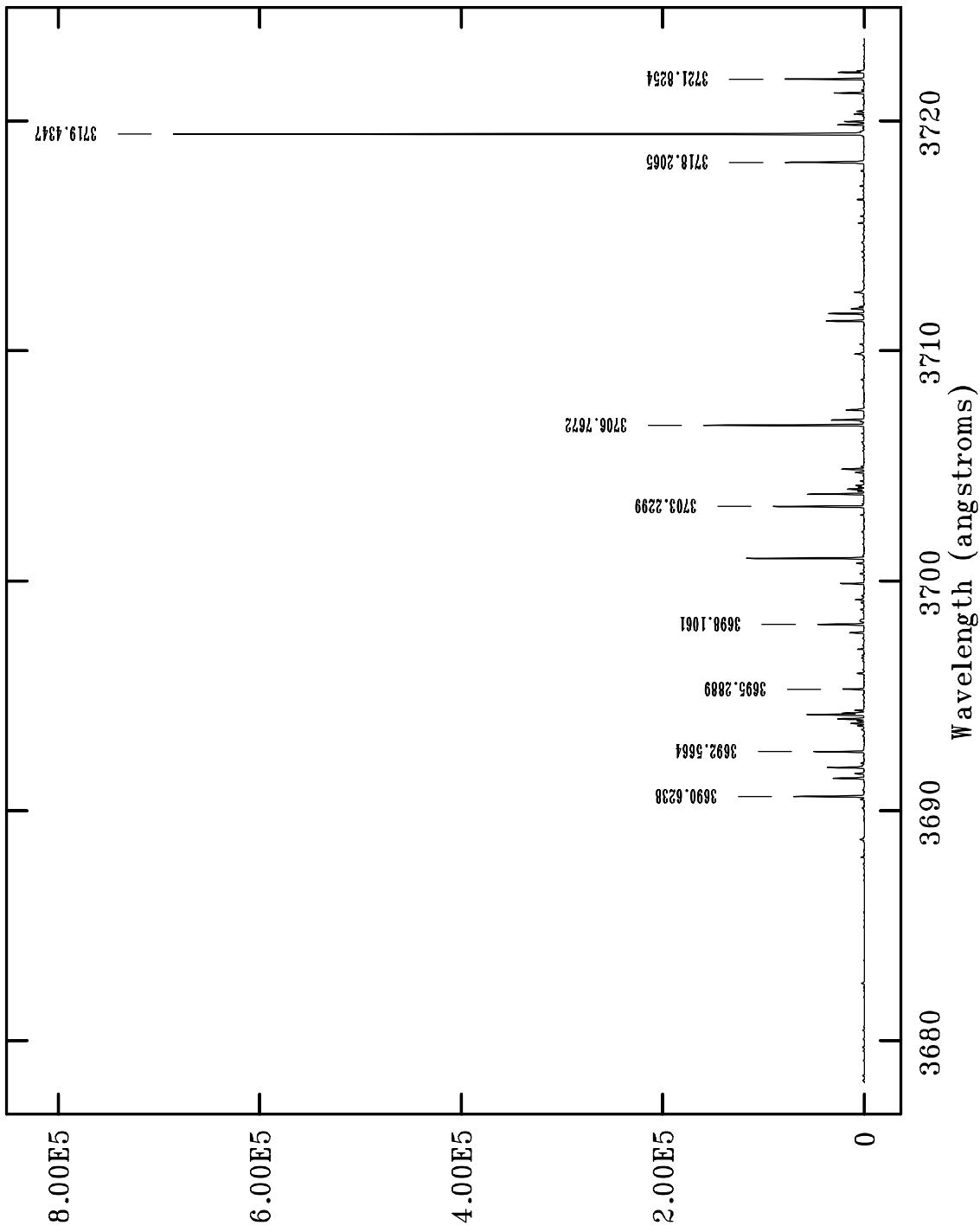
Echelle Order = 162

NOAO / IRAF V2.11EXPORT honda@data Wed 17:58:52 13-Dec-2000
Aperture 22, Image line 22, Order 162
identify ec1456: COMPARISON



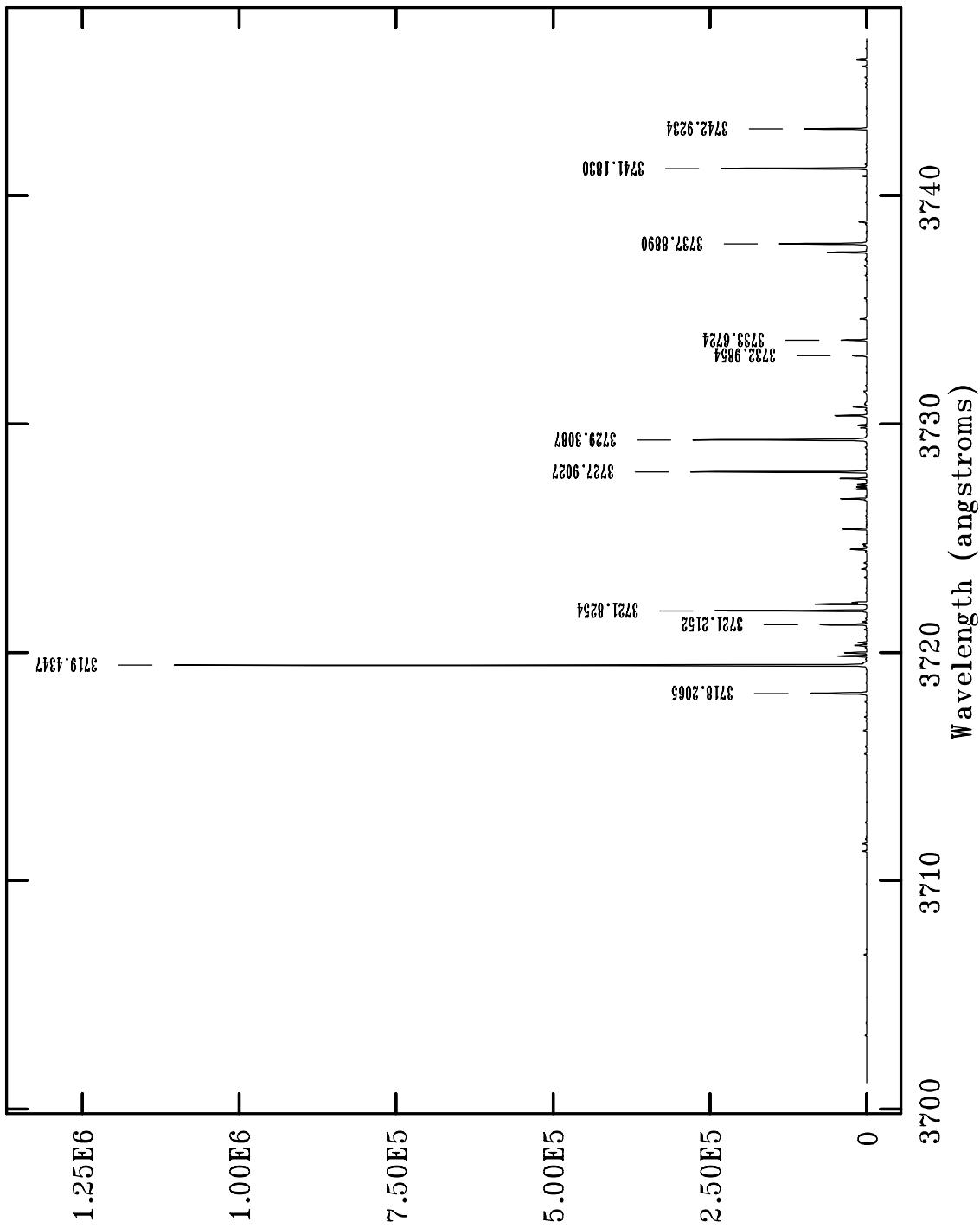
Echelle Order = 161

NOAO/IRAF V2.11EXPORT honda@data Wed 17:56:01 13-Dec-2000
Aperture 21, Image line 21, Order 161
ecid456: COMPARISON
identify



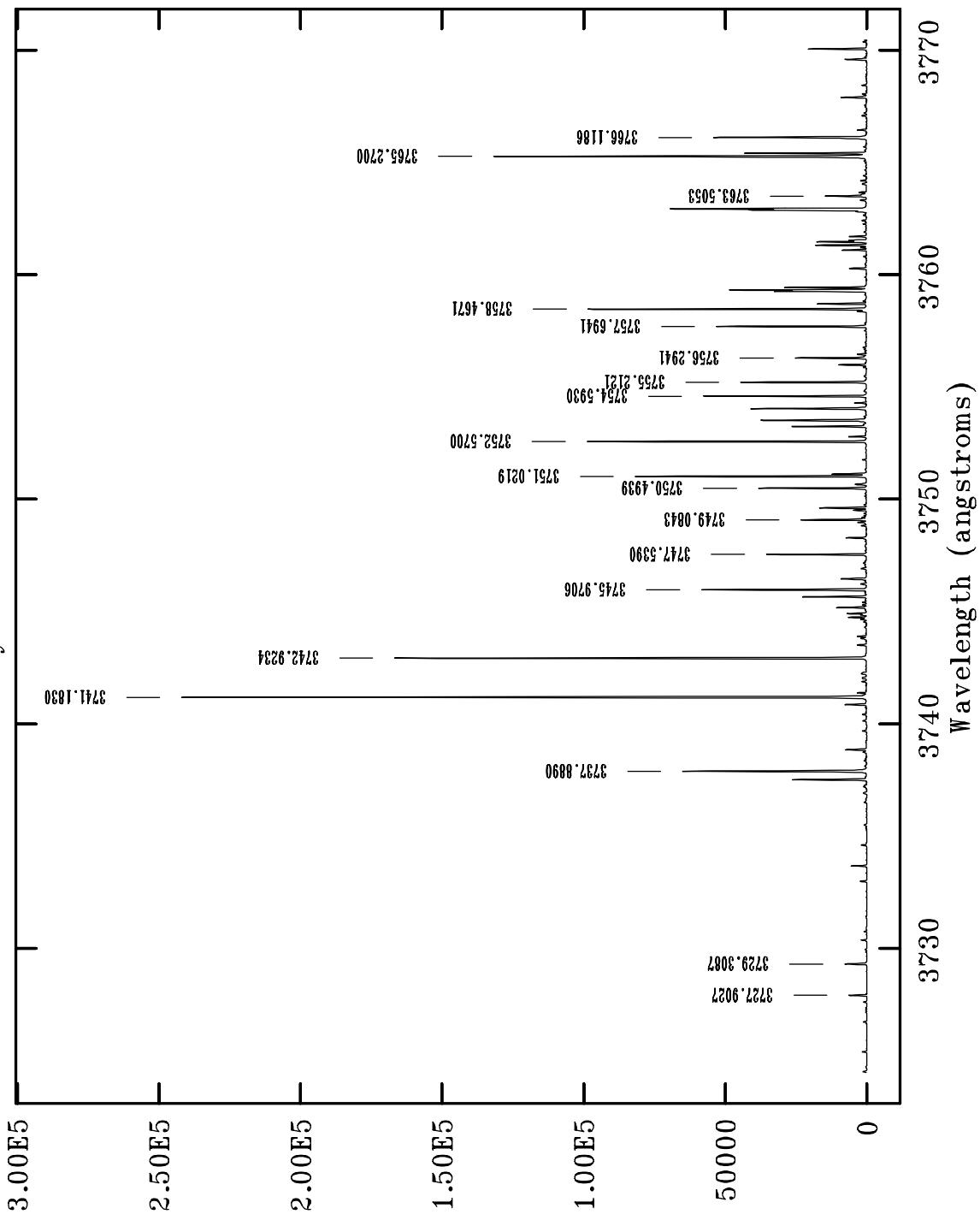
Echelle Order = 160

NOAO / IRAF V2.11EXPORT honda@data Wed 17:54:27 13-Dec-2000
Aperture 20, Image line 20, Order 160
identify ec1456: COMPARISON



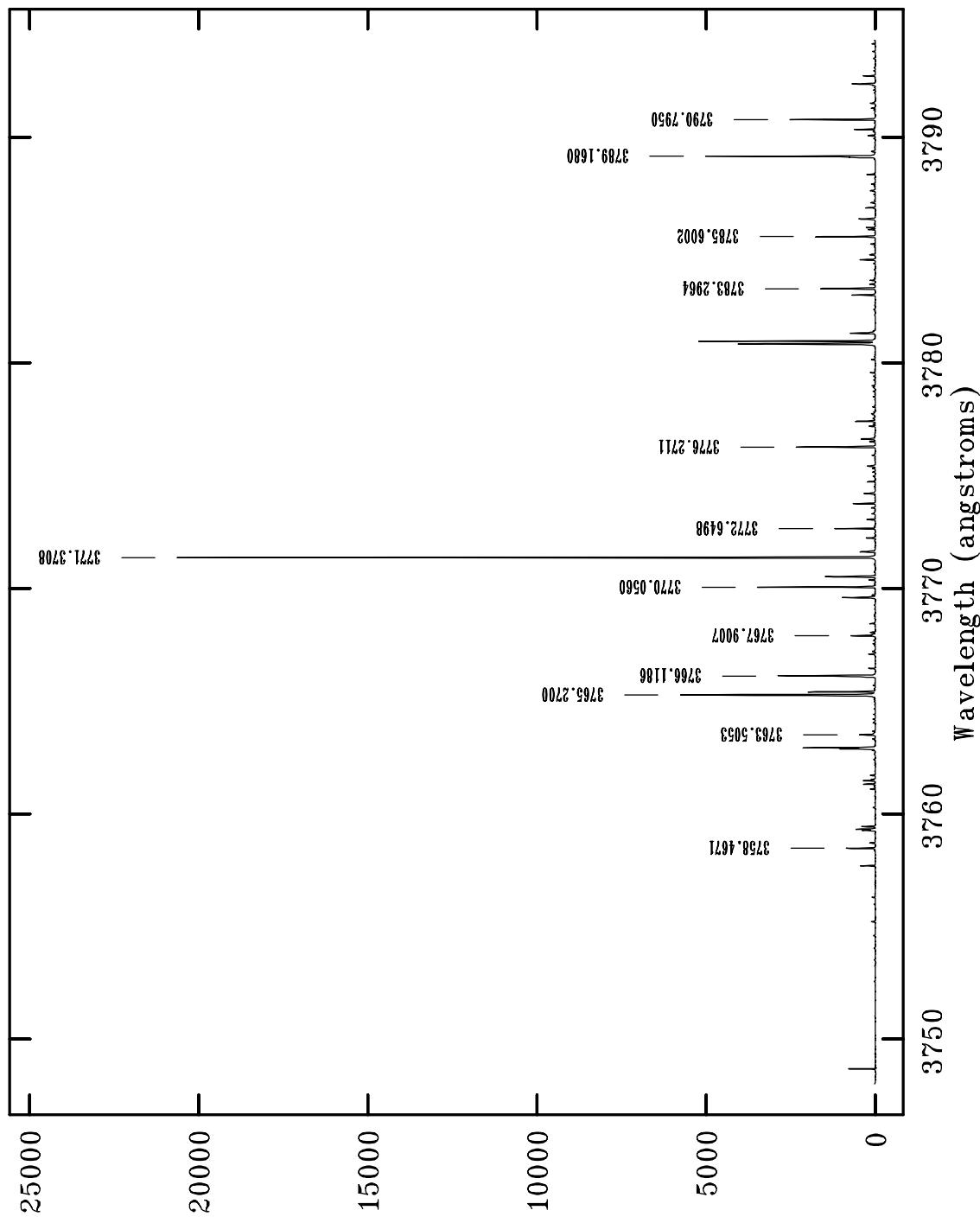
Echelle Order = 159

NOAO/IRAF V2.11EXPORT honda@data Wed 17:52:59 13-Dec-2000
Aperture 19, Image line 19, Order 159
ecidentity eci456: COMPARISON



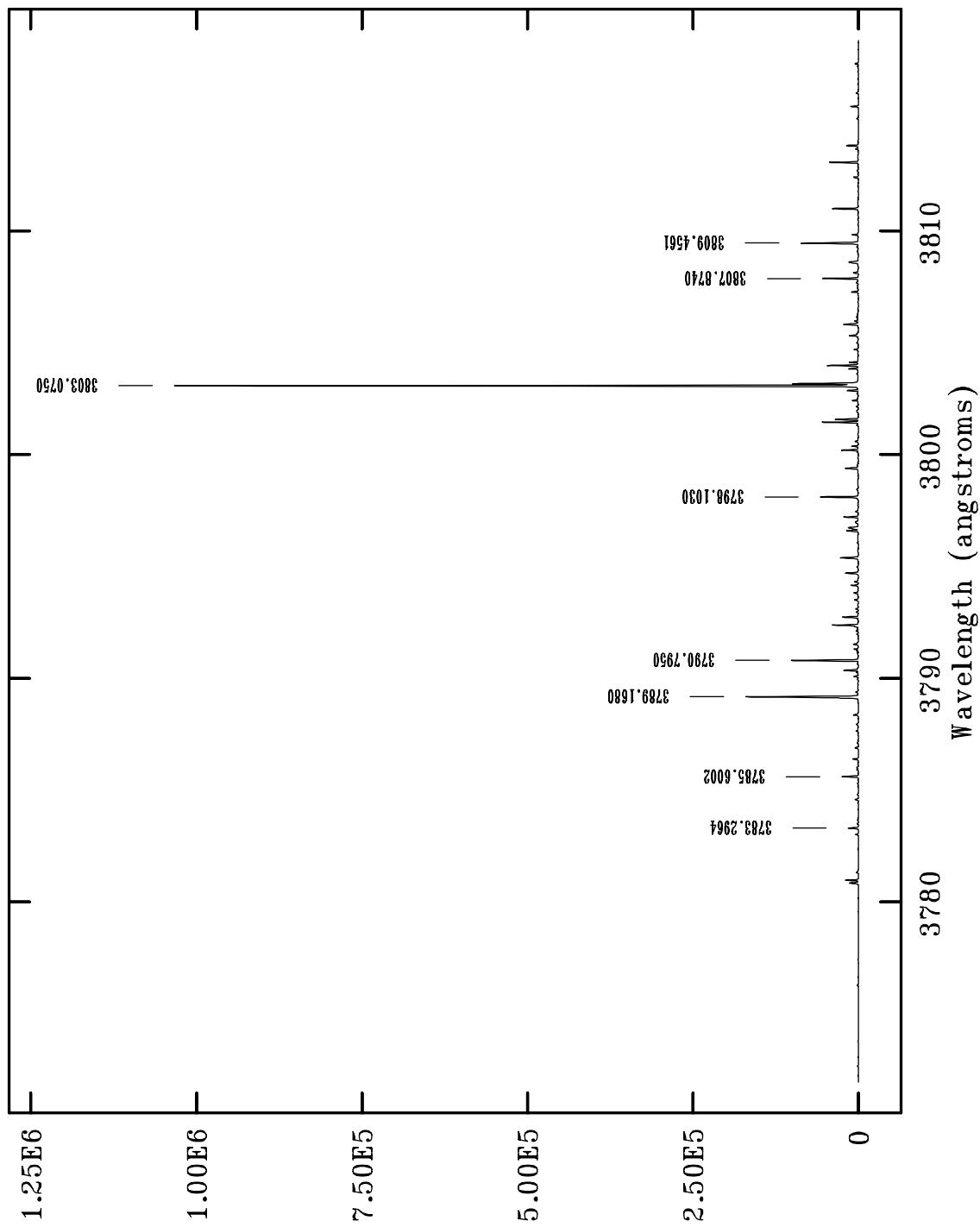
Echelle Order = 158

NOAO/IRAF V2.11.3EXPORT honda@hds Mon 15:08:19 11-Sep-2000
Aperture 28, Image line 28, Order 158, UNKNOWN
ecidentify 092:



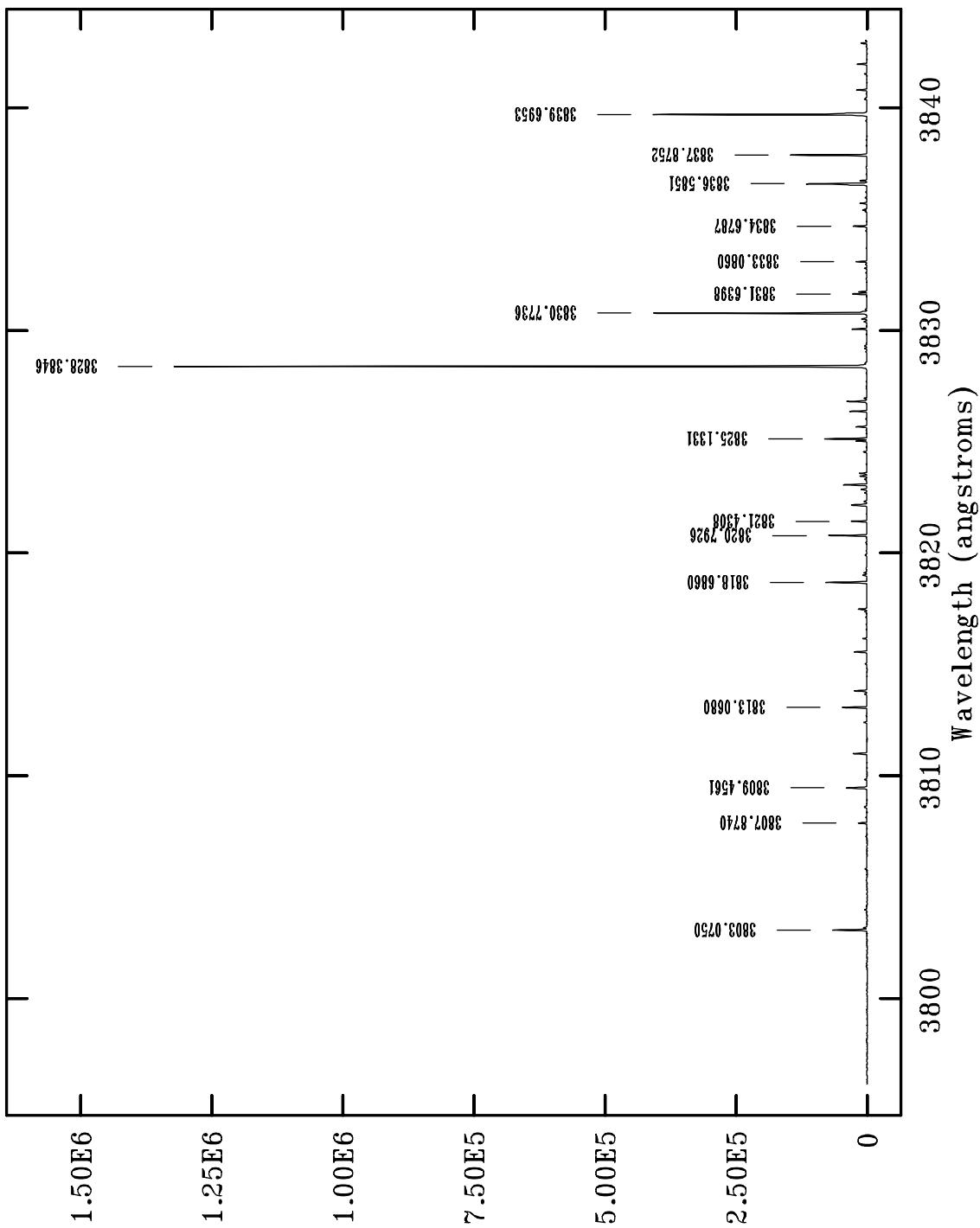
Echelle Order = 157

NOAO/IRAF V2.11EXPORT honda@data Wed 17:50:04 13-Dec-2000
Aperture 17, Image line 17, Order 157
ecidentity eci456: COMPARISON



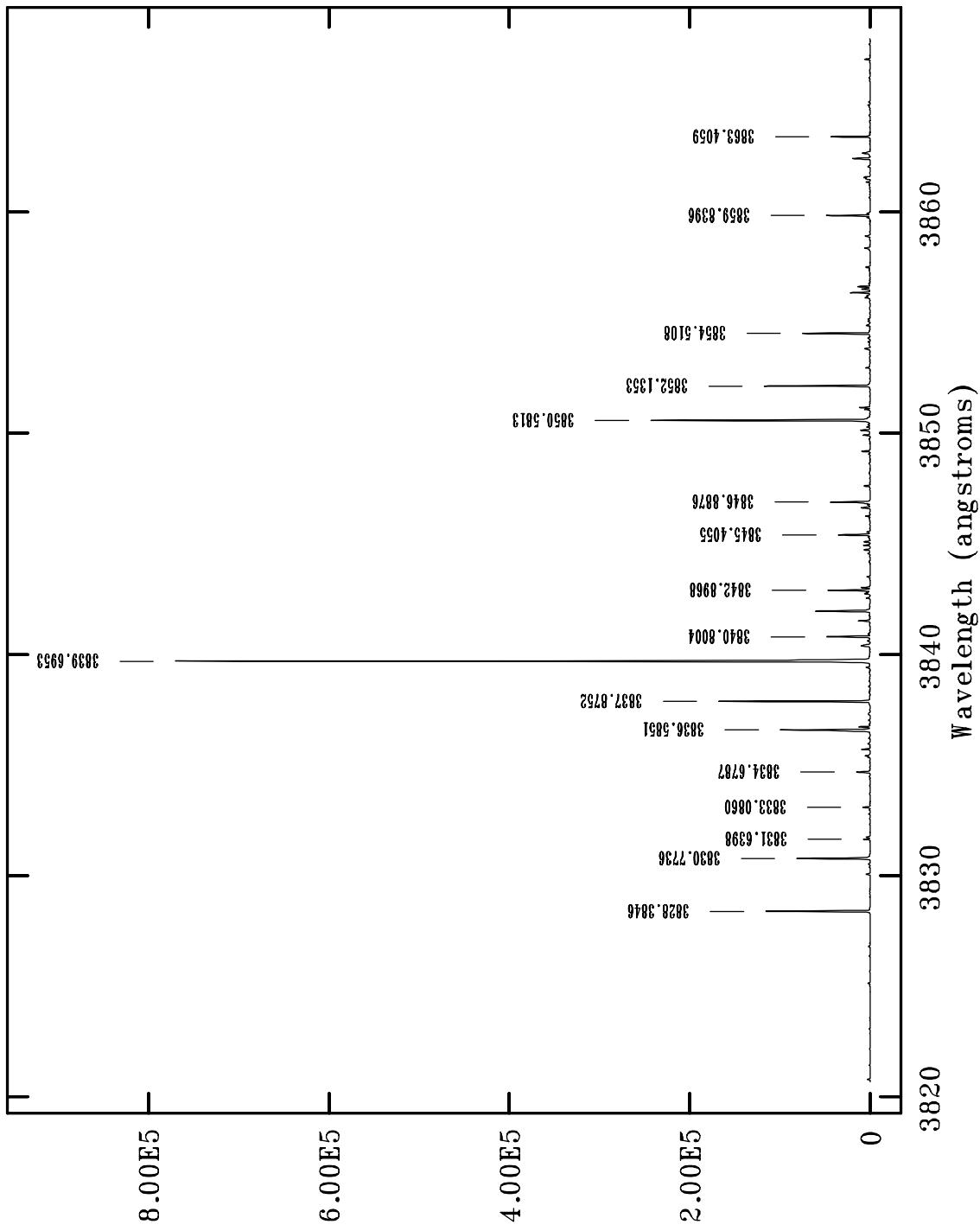
Echelle Order = 156

NOAO / IRAF V2.11EXPORT honda@data Wed 17:49:13 13-Dec-2000
Aperture 16, Image line 16, Order 156
identify ect456: COMPARISON



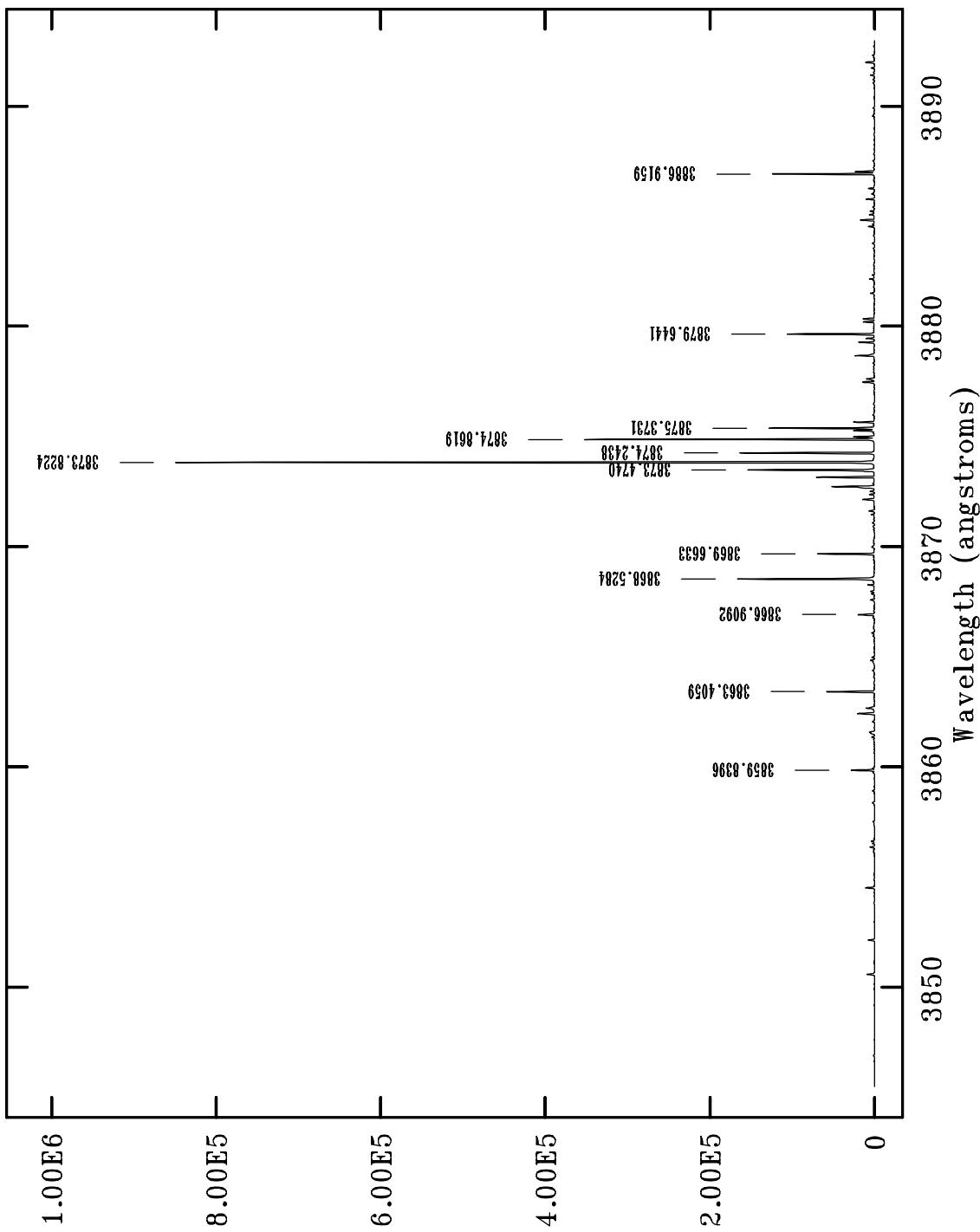
Echelle Order = 155

NOAO/IRAF V2.11EXPORT honda@data Wed 18:34:59 13-Dec-2000
Aperture 15, Image line 15, Order 155
ecid456: COMPARISON
ecid456: identify



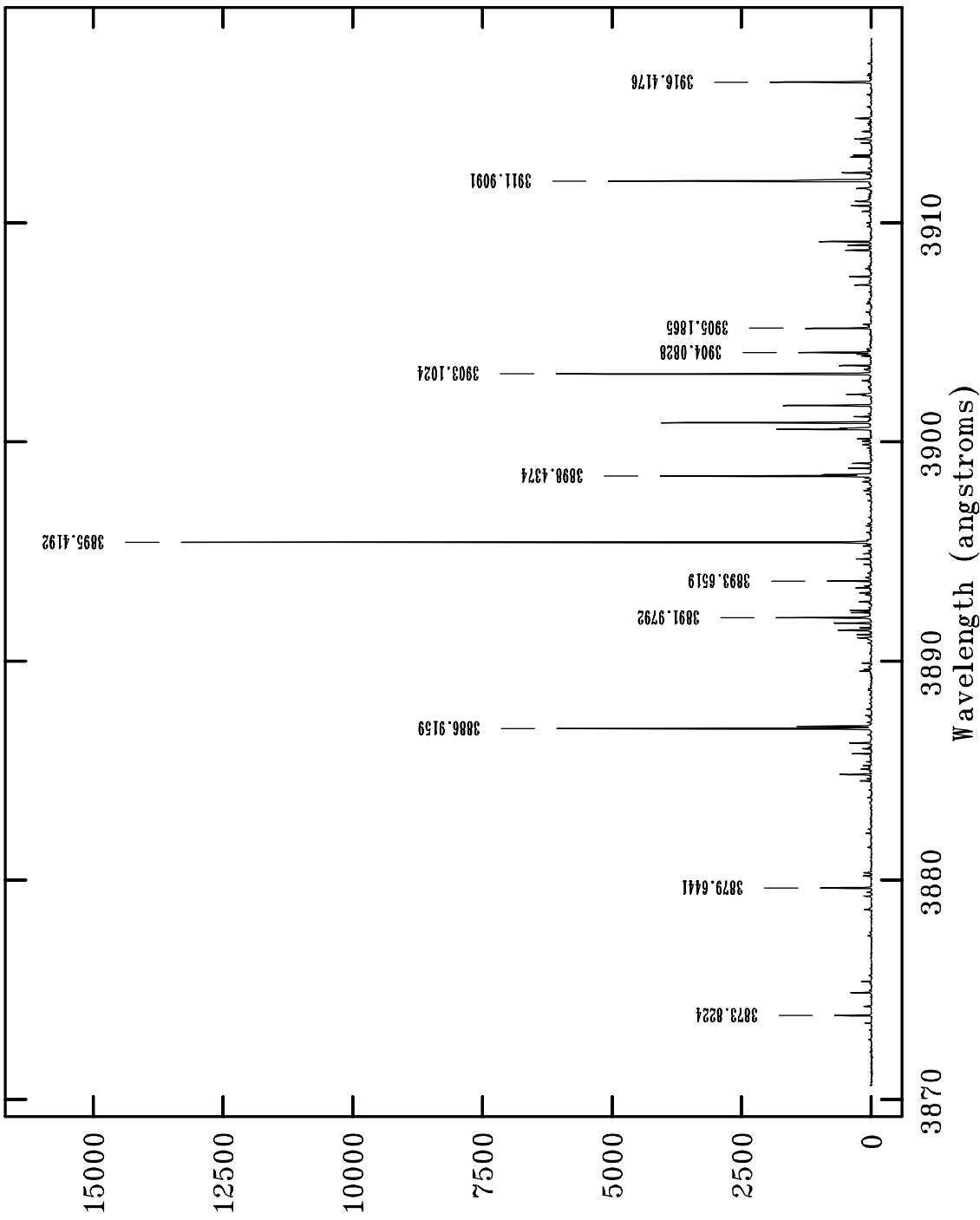
Echelle Order = 154

NOAO / IRAF V2.11EXPORT honda@data Wed 18:34:37 13-Dec-2000
Aperture 14 Image line 14 Order 154
identify ec1456: COMPARISON



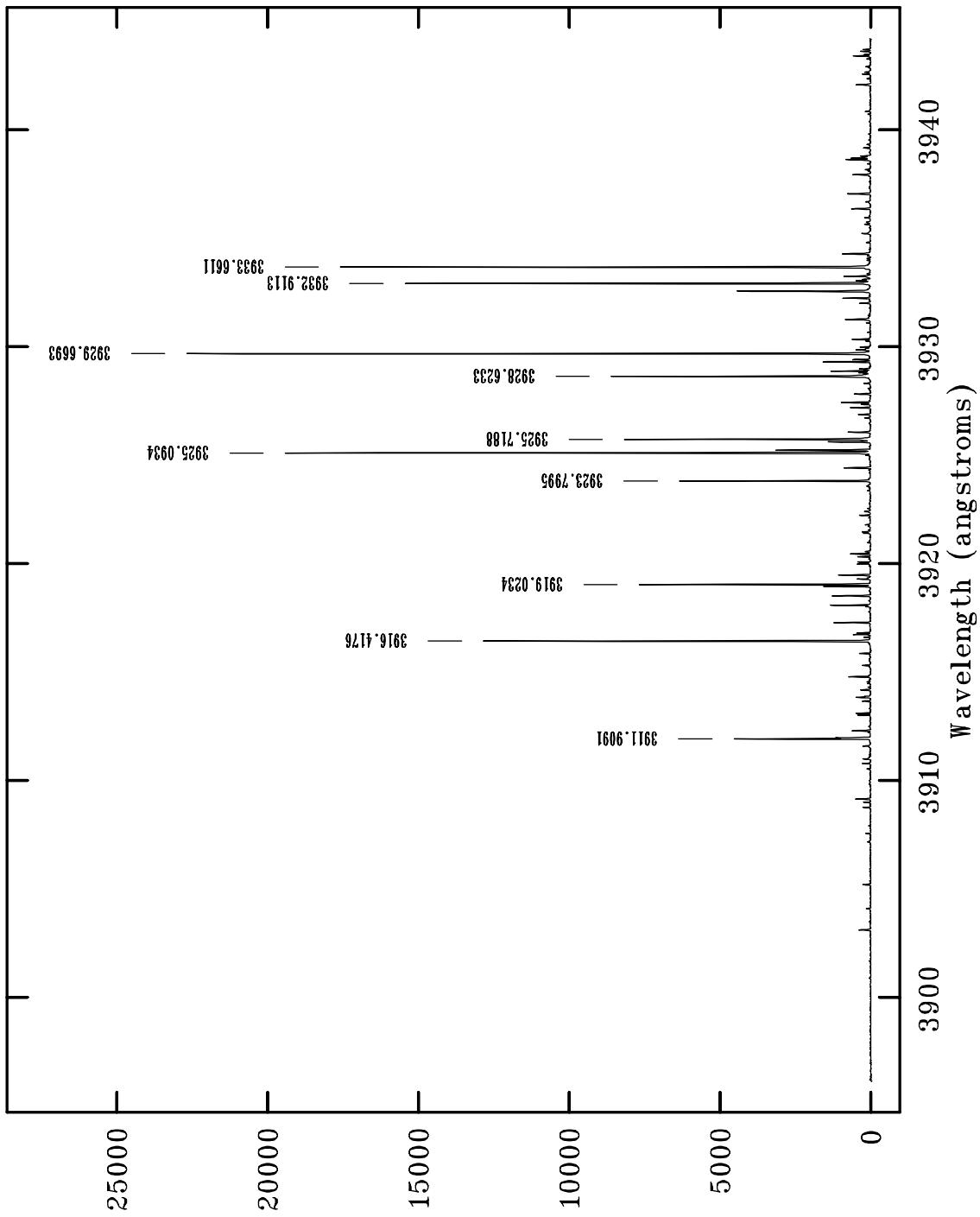
Echelle Order = 153

NOAO / IRAF V2.11.3EXPORT honda@hds Mon 14:23:24 11-Sep-2000
Aperture 23, Image line 23, Order 153
ecidentify 092: UNKNOWN



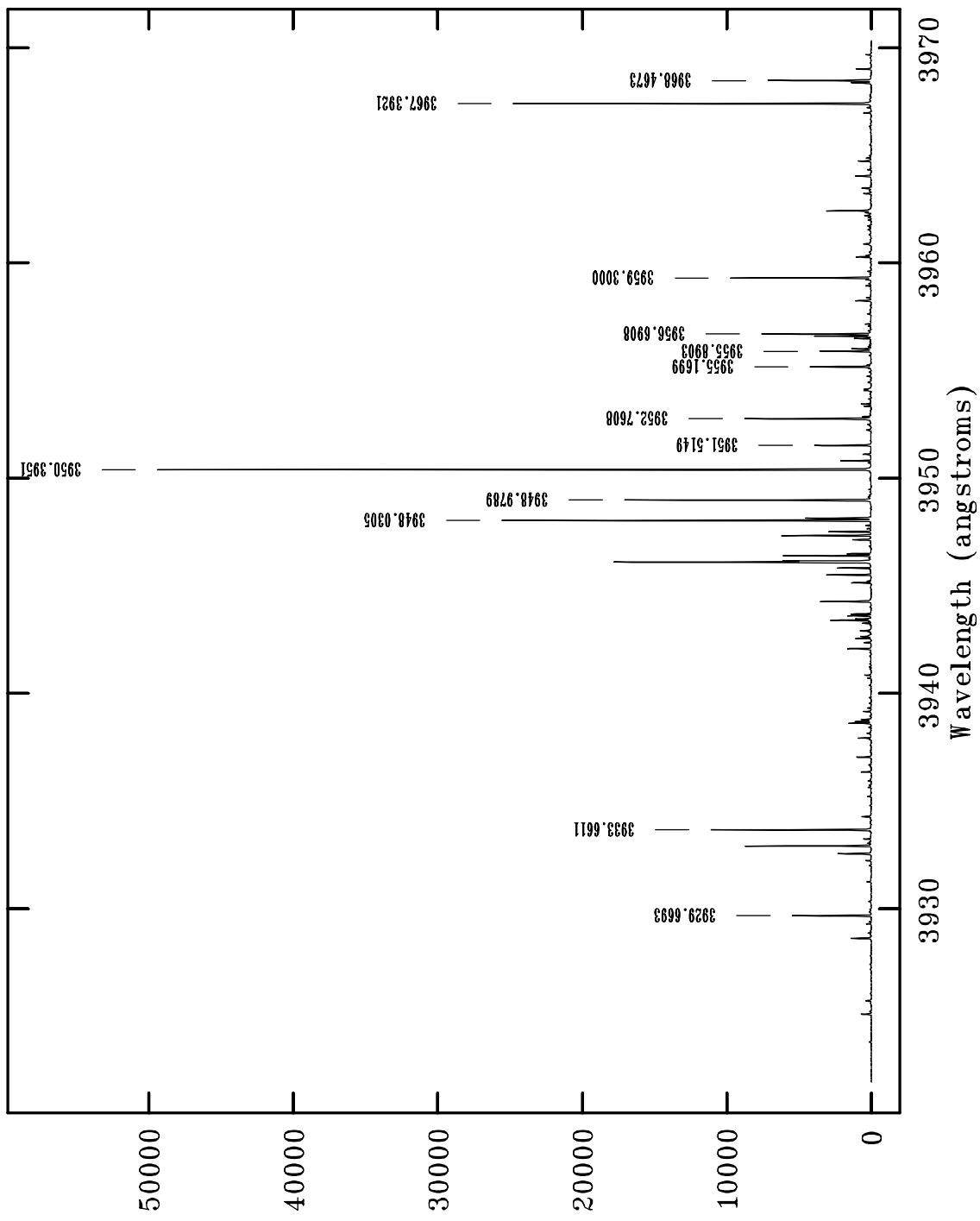
Echelle Order = 152

NOAO/IRAF V2.11.3EXPORT honda@hds Mon 14:18:02 11-Sep-2000
Aperture 22, Image line 22, Order 152 UNKNOWN
identify 092: UNKNOWN



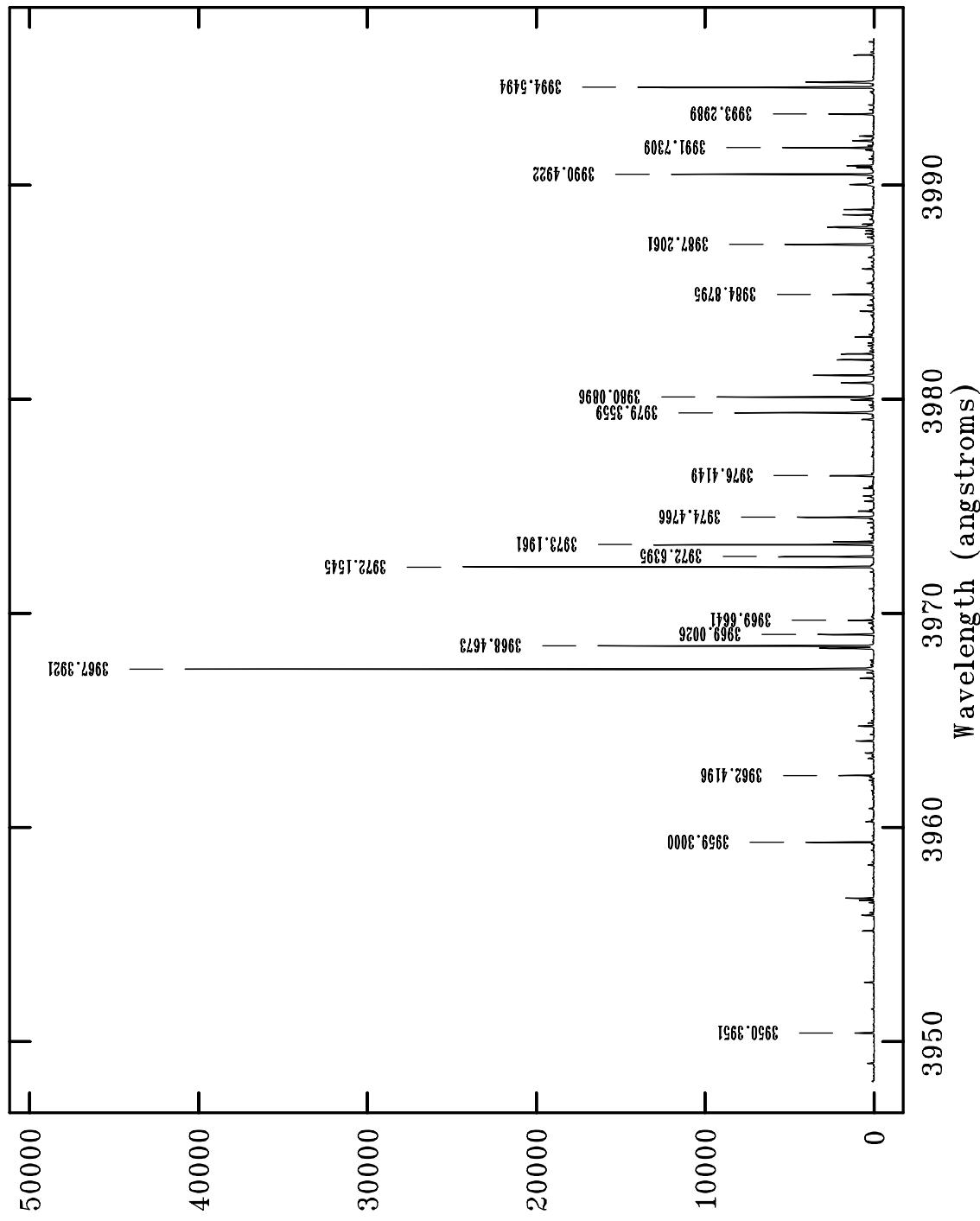
Echelle Order = 151

NOAO/IRAF V2.11.3EXPORT honda@hds Mon 14:16:13 11-Sep-2000
Aperture 21, Image line 21, Order 151
ecidentify 092: UNKNOWN



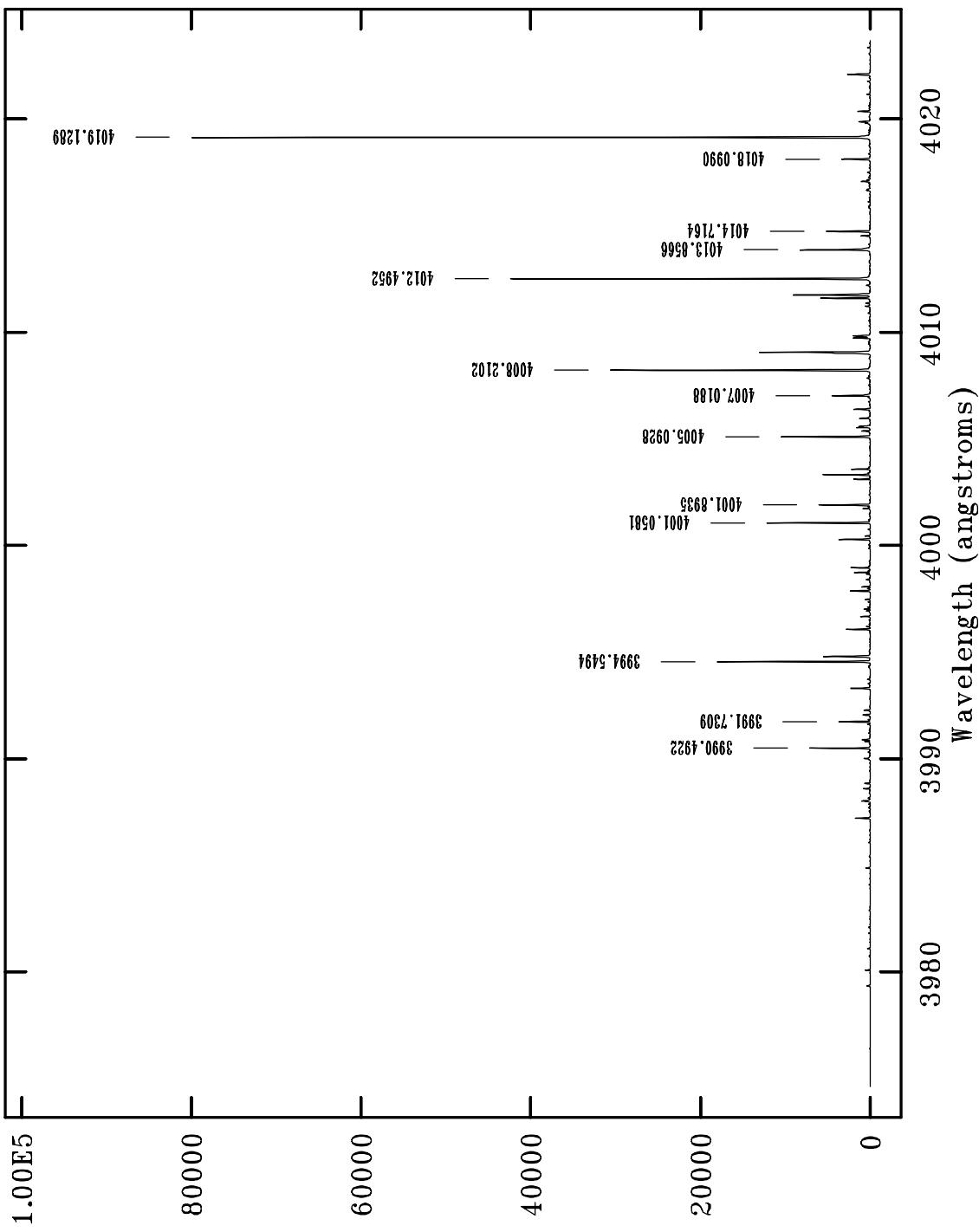
Echelle Order = 150

NOAO/IRAF V2.11.3EXPORT honda@hds Mon 14:04:34 11-Sep-2000
Aperture 20, Image 20, Order 150
identify 092: UNKNOWN



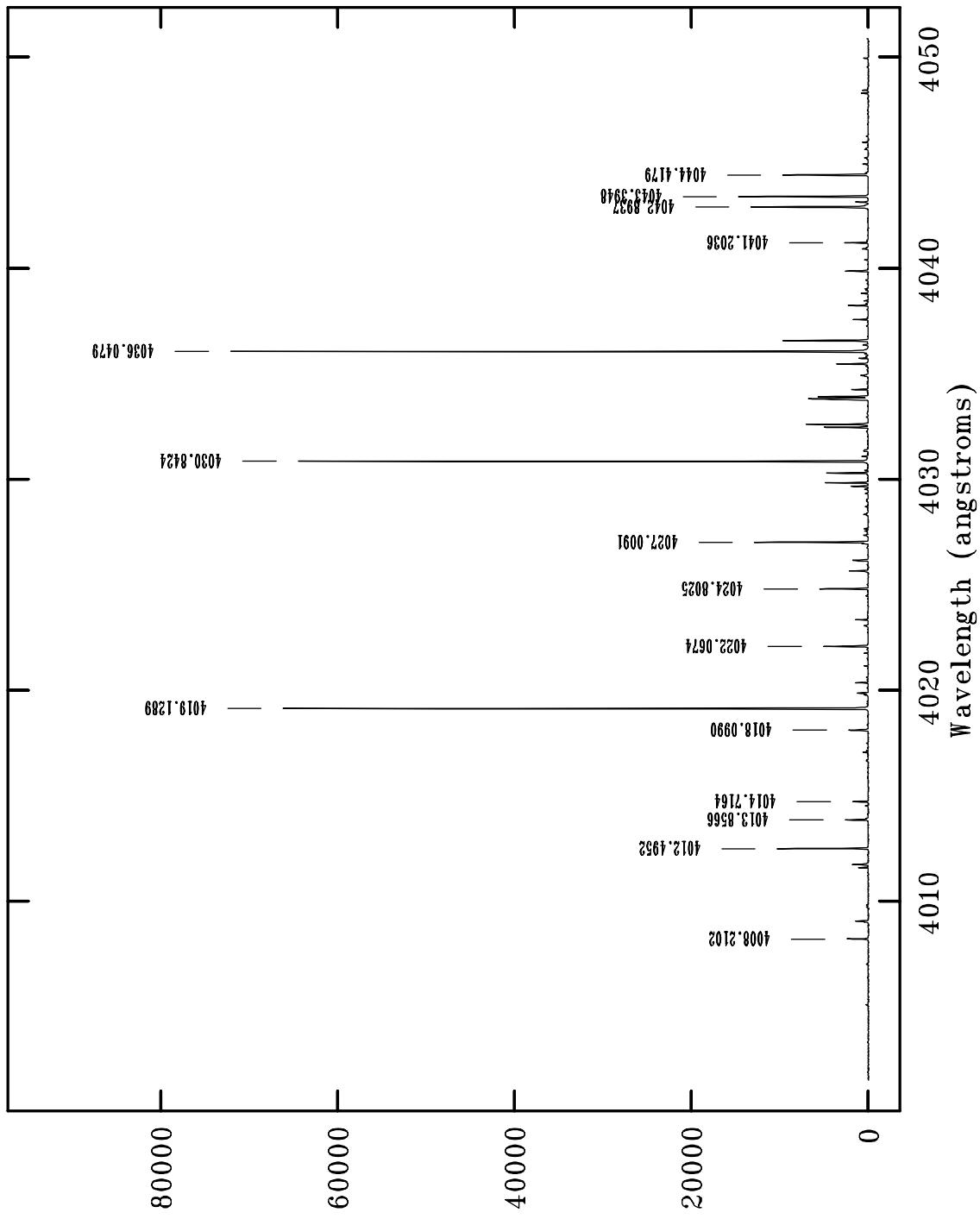
Echelle Order = 149

NOAO / IRAF V2.11.3EXPORT honda@hds Tue 20:07:27 19-Sep-2000
Aperture 19, Image line 19, Order 149
identify 092: UNKNOWN



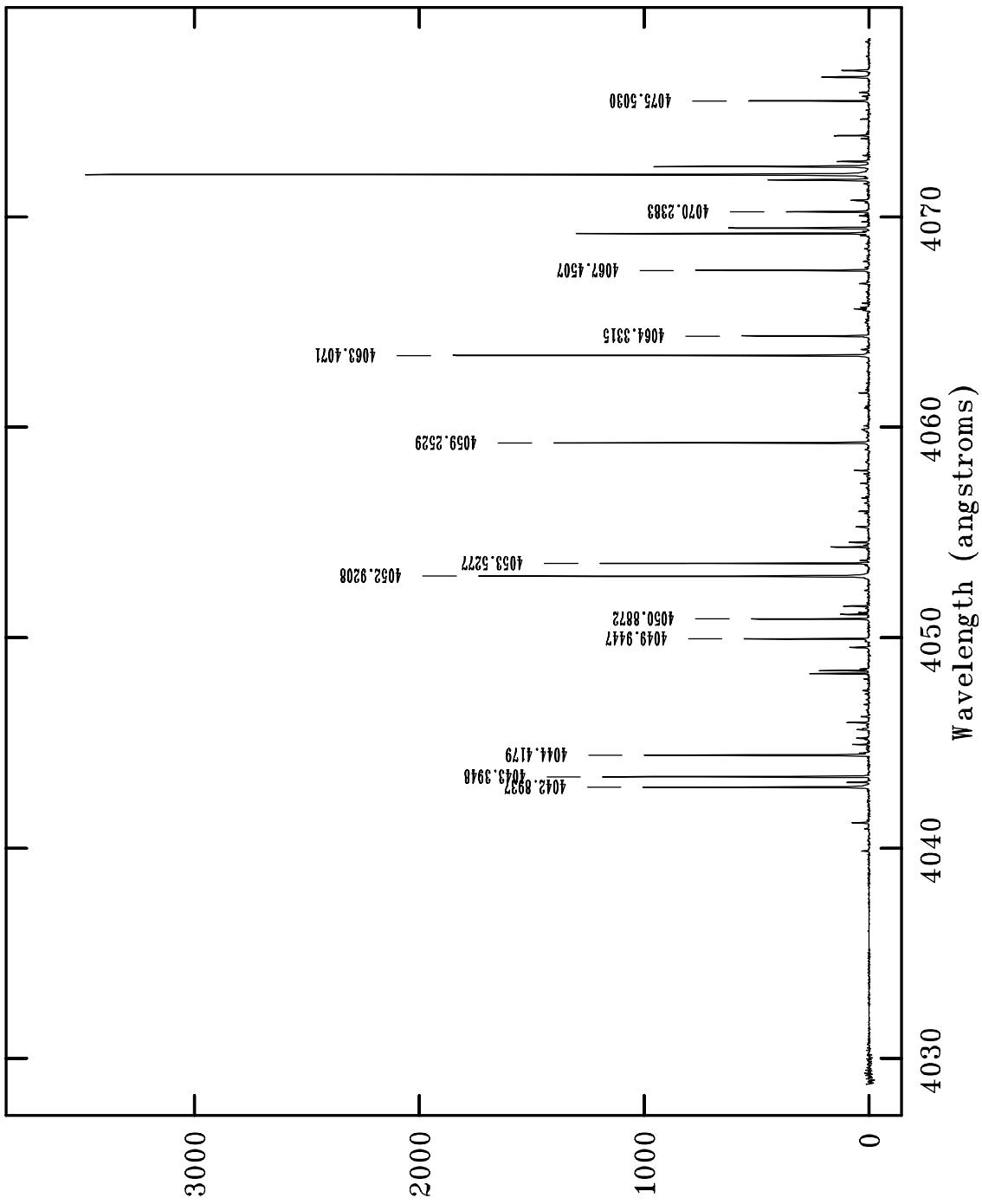
Echelle Order = 148

NOAO / IRAF V2.11.3EXPORT honda@hds Tue 20:06:24 19-Sep-2000
Aperture 18, Image line 18, Order 148
identify 092: UNKNOWN



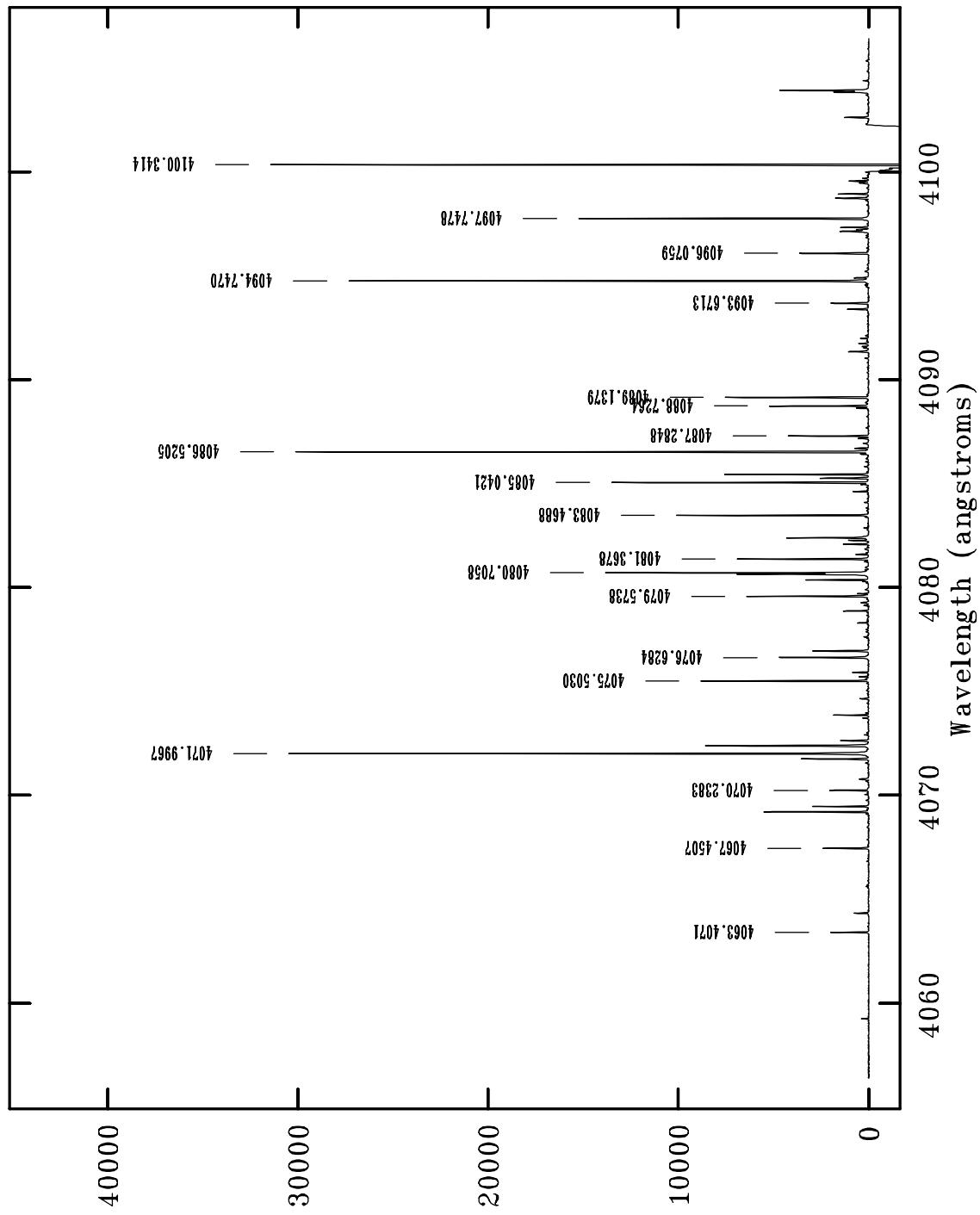
Echelle Order = 147

NOAO / IRAF V2.11.3EXPORT honda@hds Tue 20:05:09 19-Sep-2000
Aperture 17, Image line 17, Order 147
identify 092: UNKNOWN
ecidentity



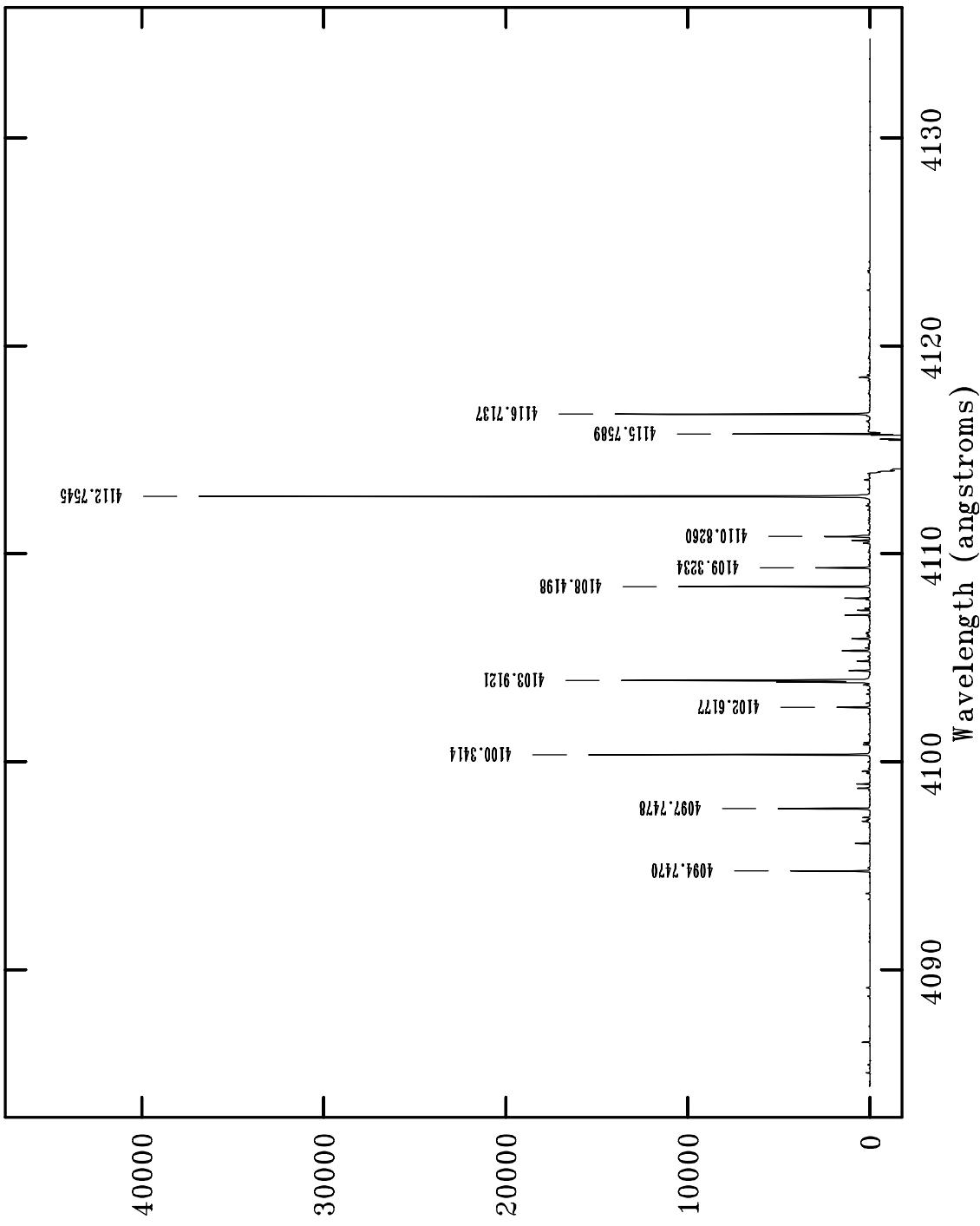
Echelle Order = 146

NOAO / IRAF V2.11.3EXPORT honda@hds Tue 20:04:27 19-Sep-2000
Aperture 16, Image line 16, Order 146
identify 092: UNKNOWN



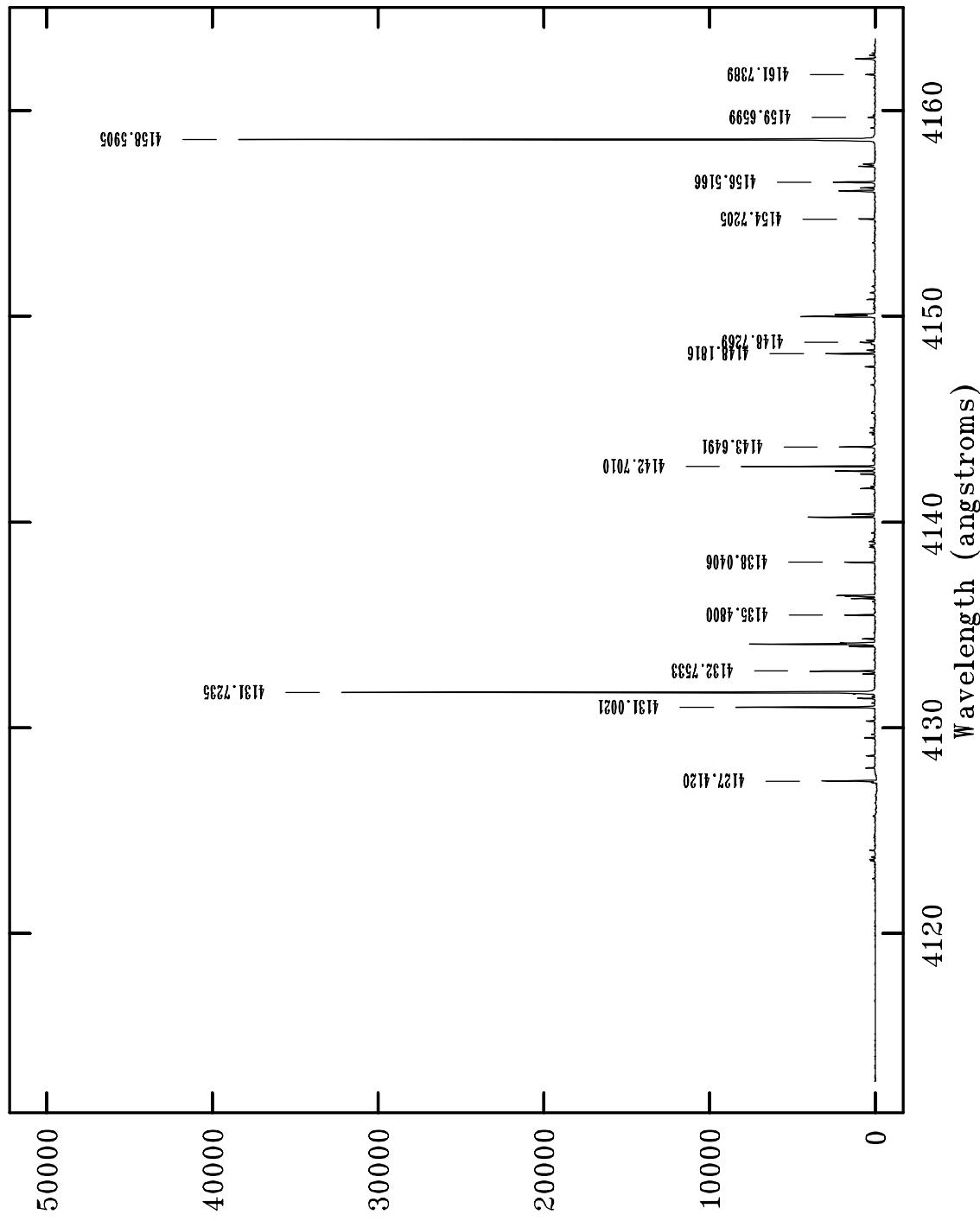
Echelle Order = 145

NOAO / IRAF V2.11.3EXPORT honda@hds Tue 20:01:30 19-Sep-2000
Aperture 15, Image line 15, Order 145
identify 092: UNKNOWN



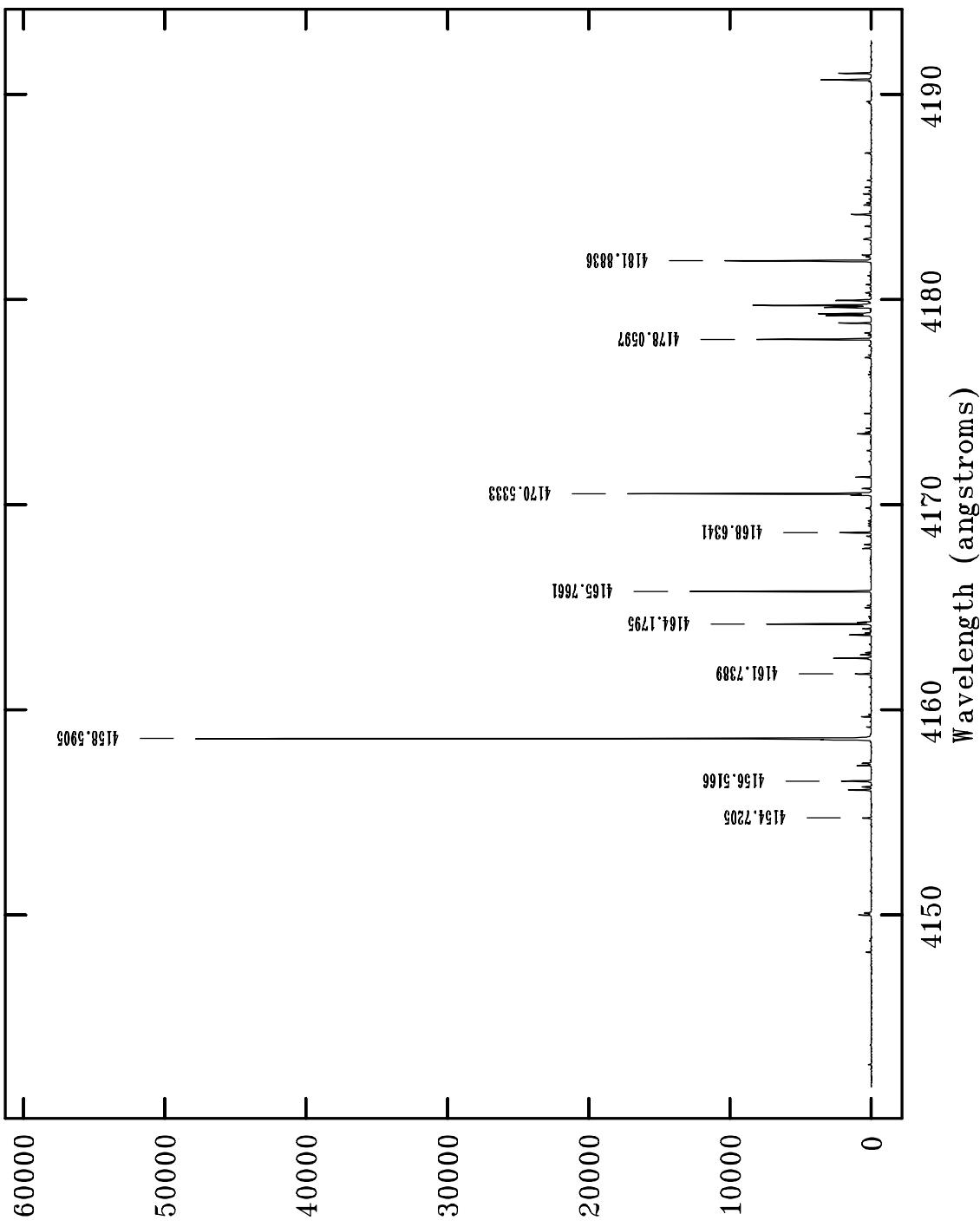
Echelle Order = 144

NOAO / IRAF V2.11.3EXPORT honda@hds Tue 20:00:55 19-Sep-2000
Aperture 14, Image line 14, Order 144
identify 092: UNKNOWN



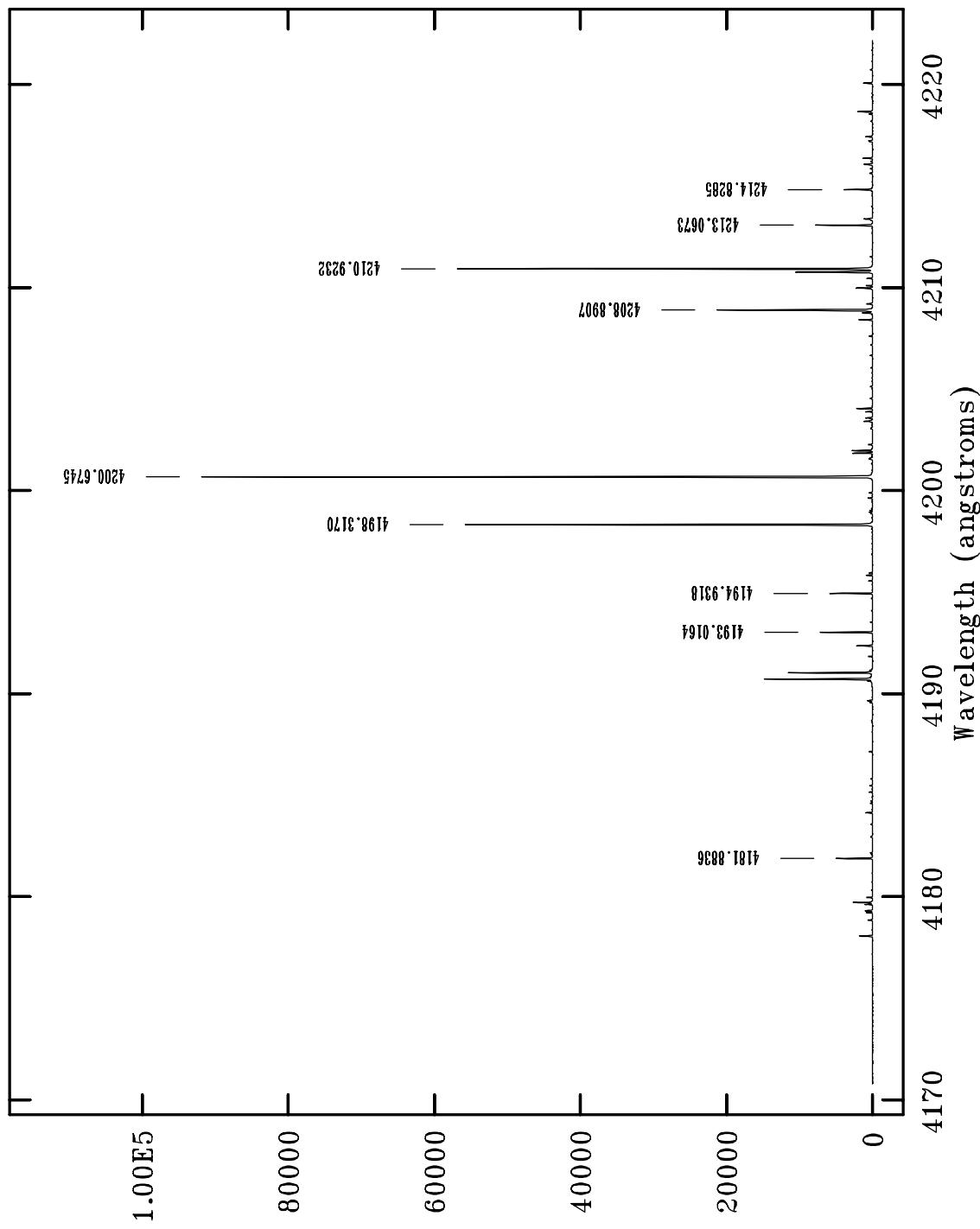
Echelle Order = 143

NOAO / IRAF V2.11.3EXPORT honda@hds Tue 20:00:14 19-Sep-2000
Aperture 13, Image line 13, Order 143
identify 092: UNKNOWN



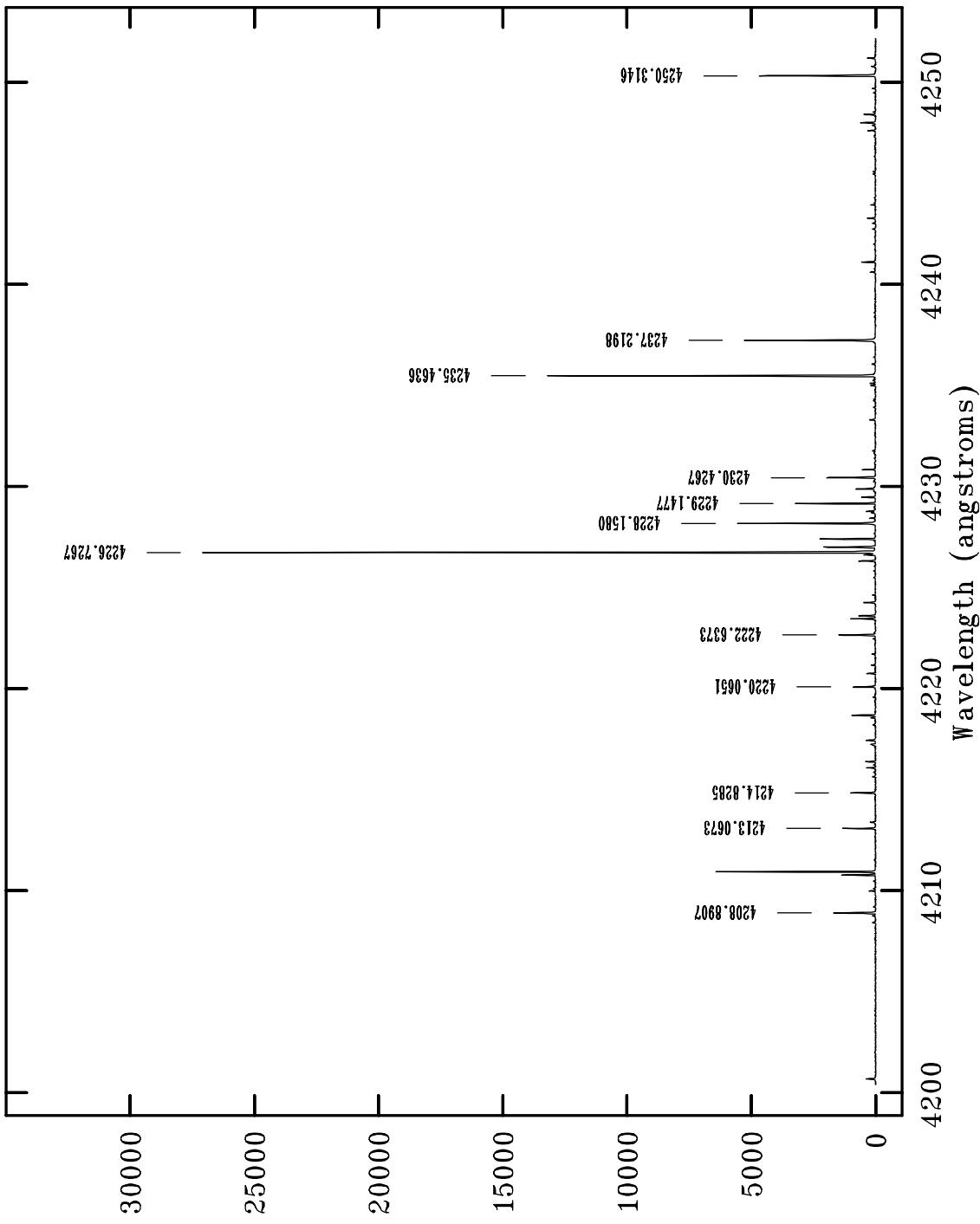
Echelle Order = 142

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 21:56:40 30-Nov-2000
Aperture 12, Image line 12, Order 142
identify 092: UNKNOWN



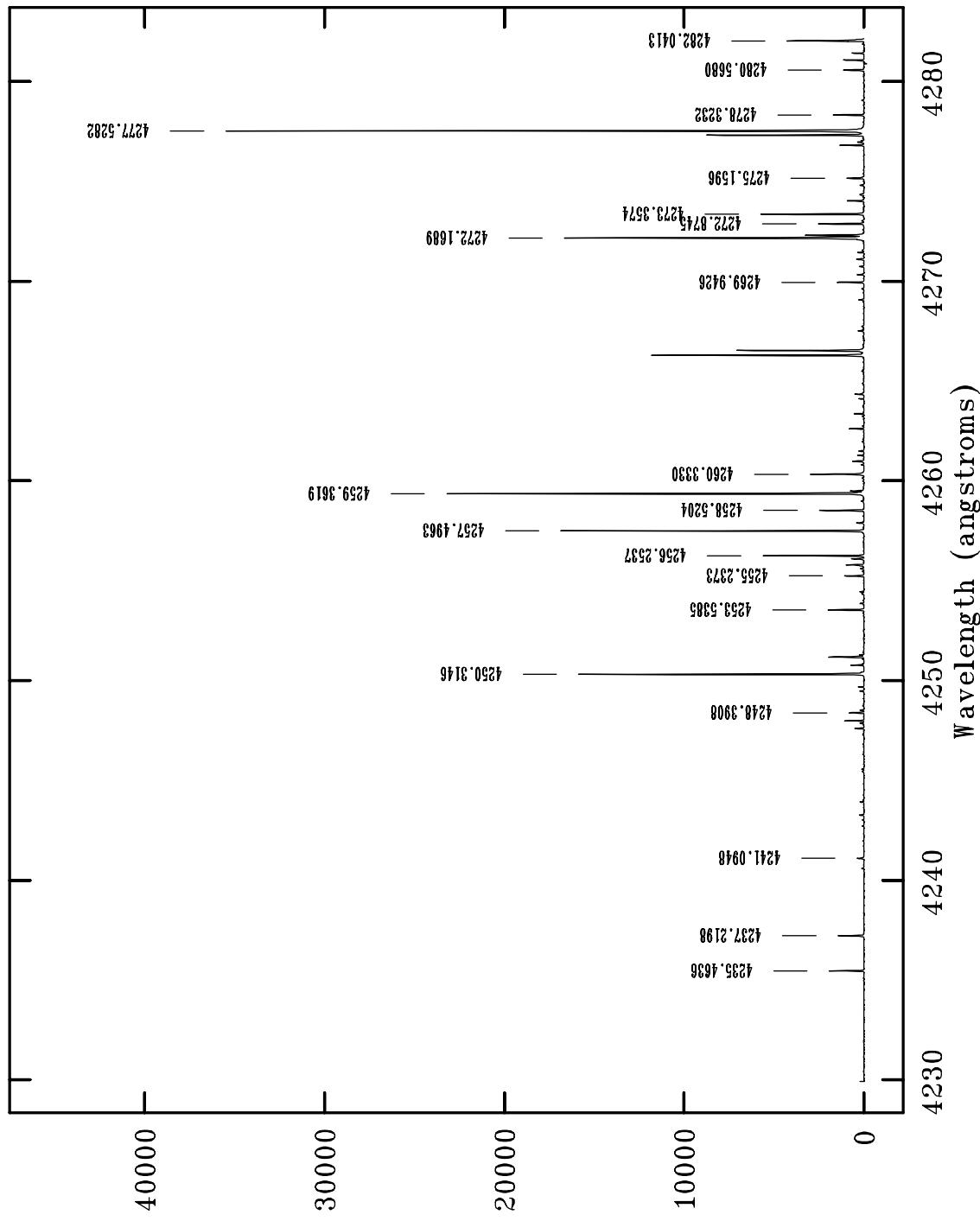
Echelle Order = 141

NOAO / IRAF V2.11.3EXPORT honda@hds Tue 19:57:25 19-Sep-2000
Aperture 11, Image line 11, Order 141
identify 092: UNKNOWN



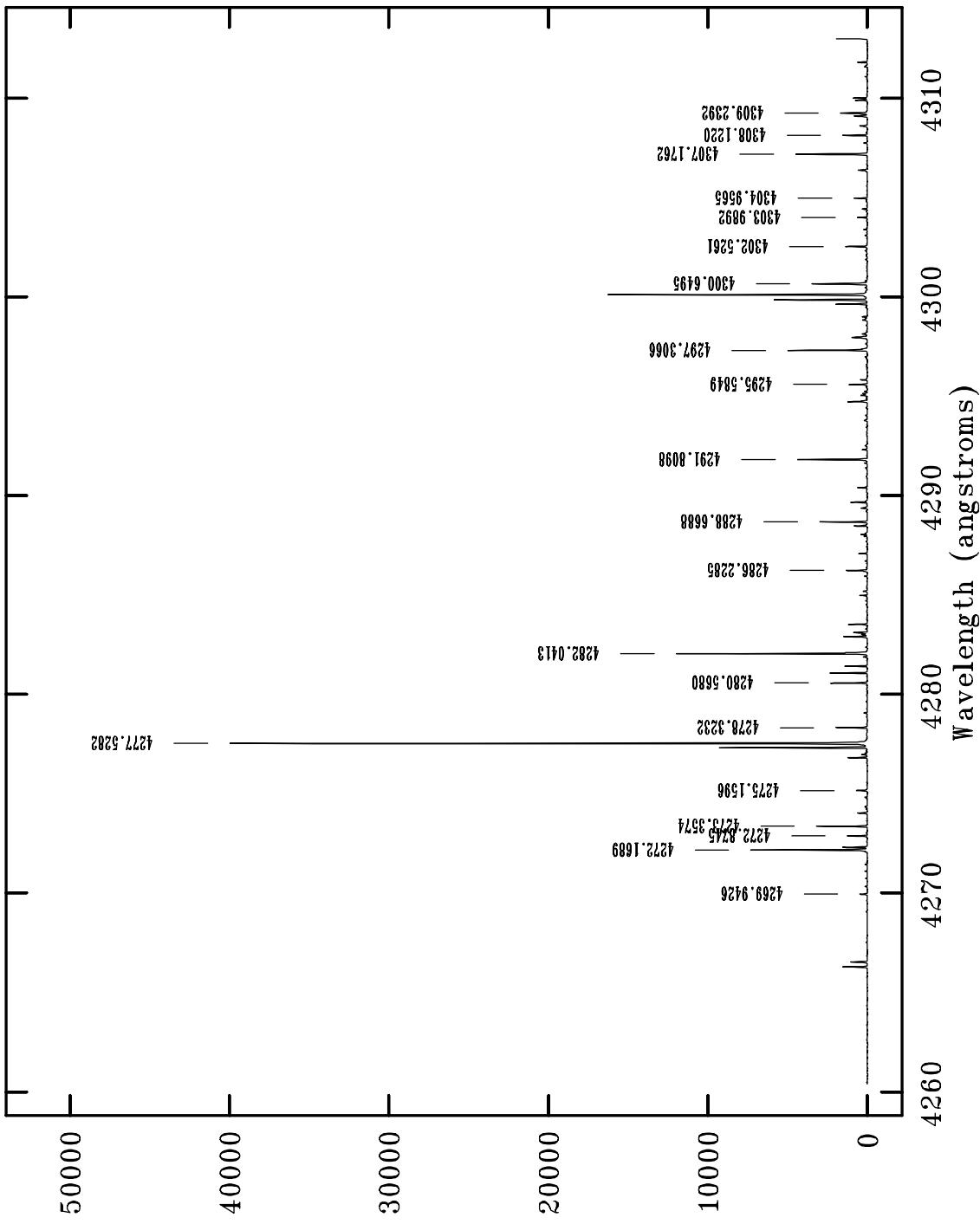
Echelle Order = 140

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 21:55:34 30-Nov-2000
Aperture 23, Image line 23, Order 140
ecidentify 080: UNKNOWN



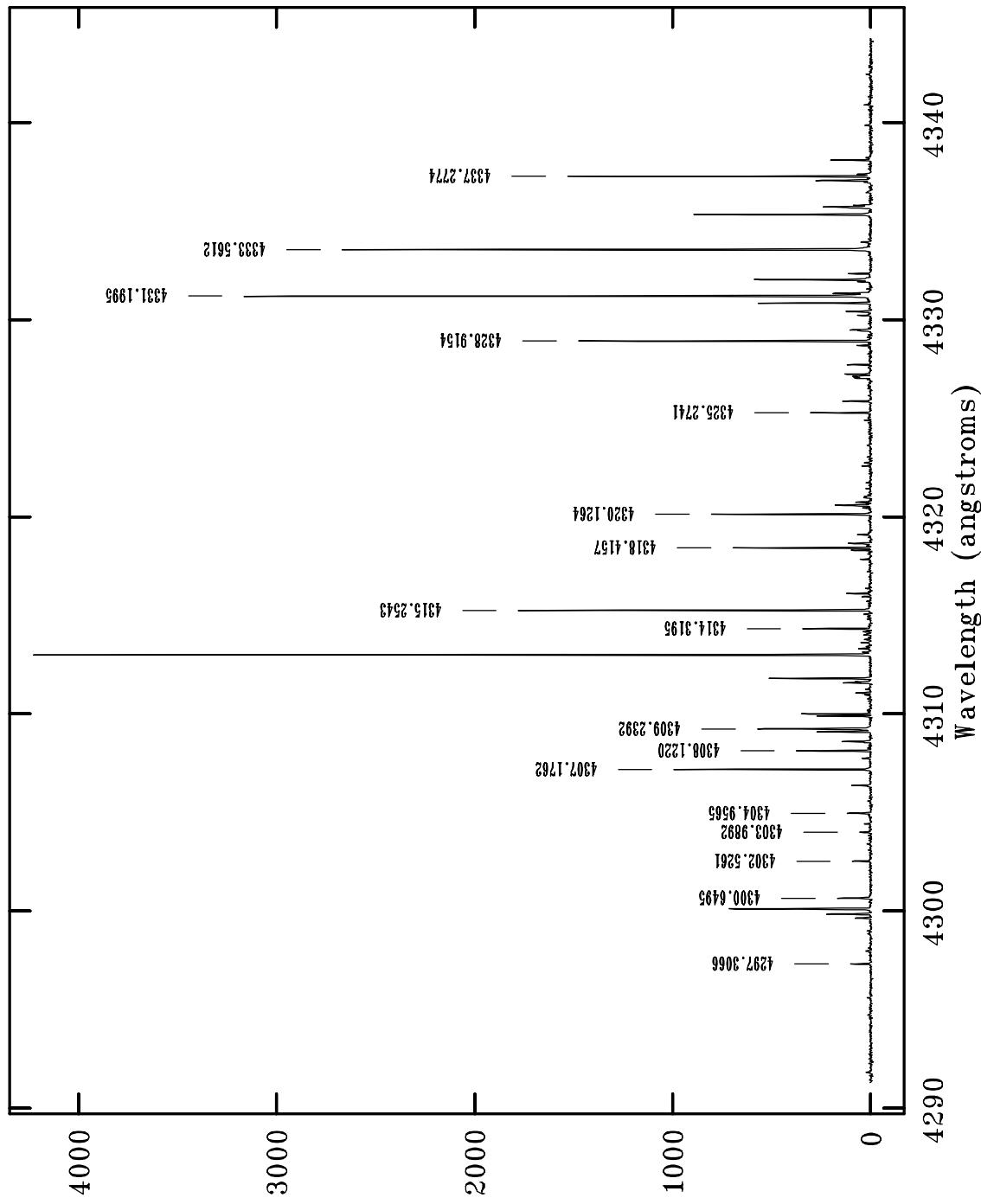
Echelle Order = 139

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 21:55:12 30-Nov-2000
Aperture 22, Image line 22, Order 139
identify 080: UNKNOWN



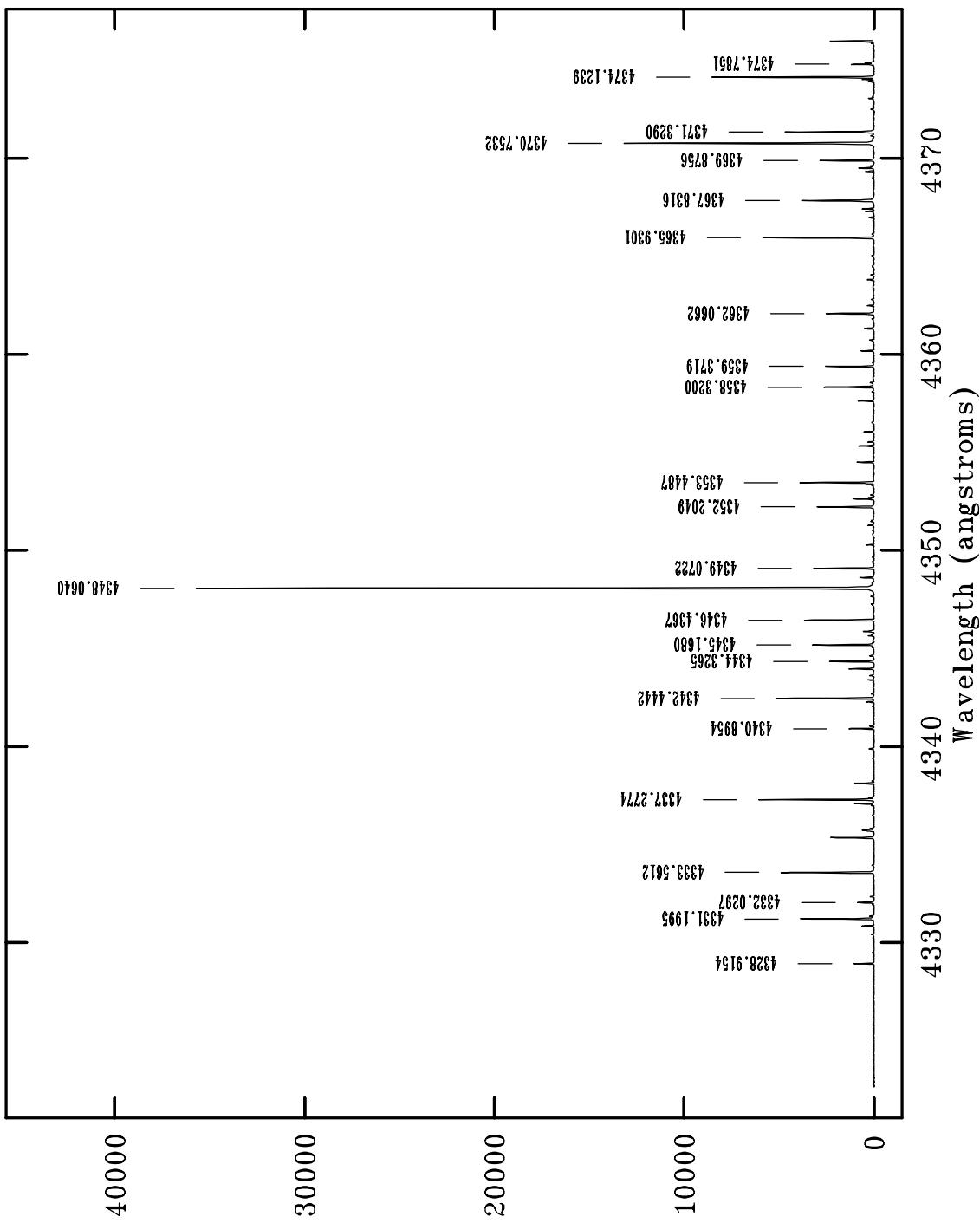
Echelle Order = 138

NOAO/IRAF V2.11.3EXPORT honda@hds Mon 15:20:14 18-Sep-2000
Aperture 21, Image line 21, Order 138
identify 080: UNKNOWN



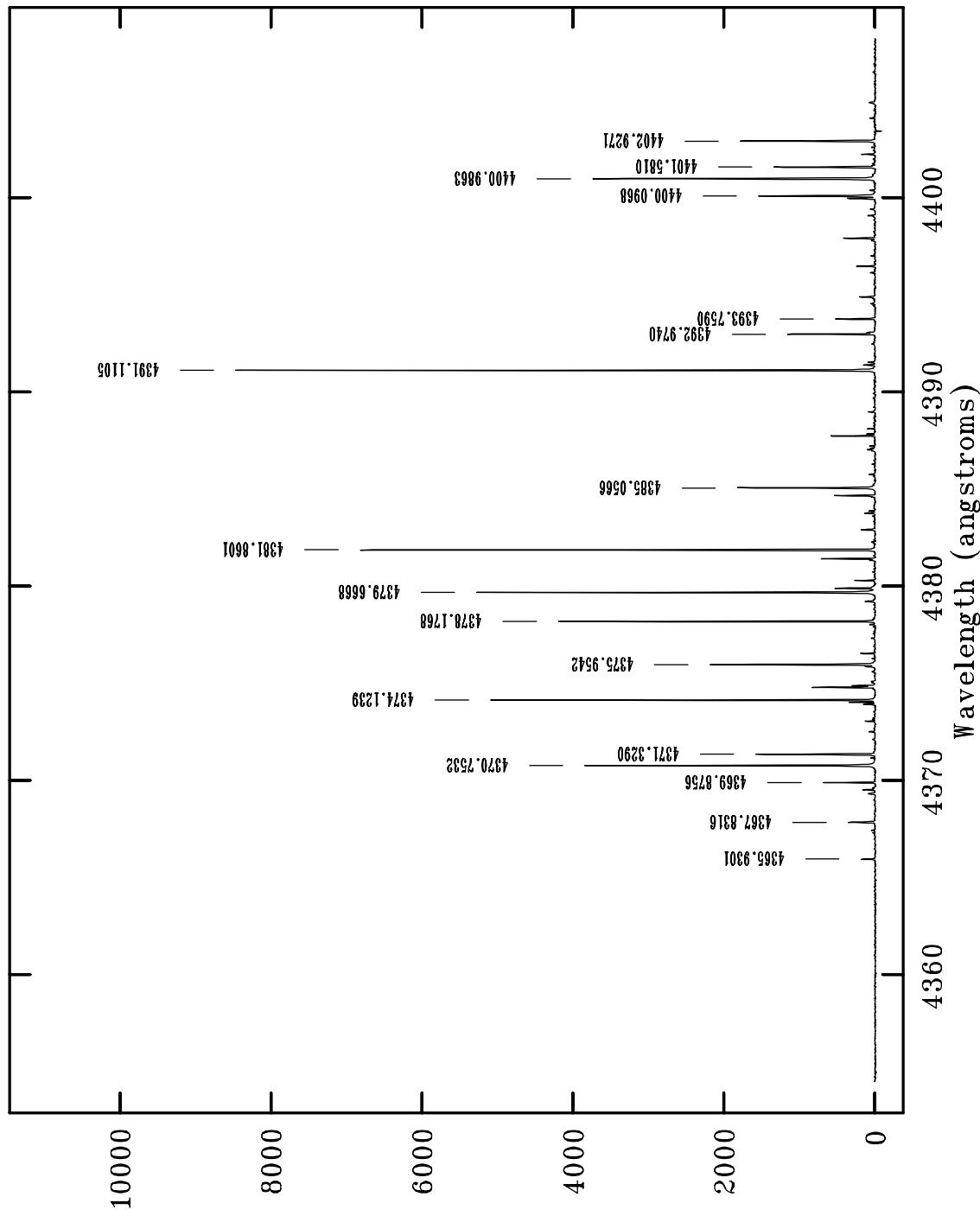
Echelle Order = 137

NOAO / IRAF V2.11.3EXPORT honda@hds Mon 15:06:23 18-Sep-2000
Aperture 20, Image line 20, Order 136
identify 080: UNKNOWN



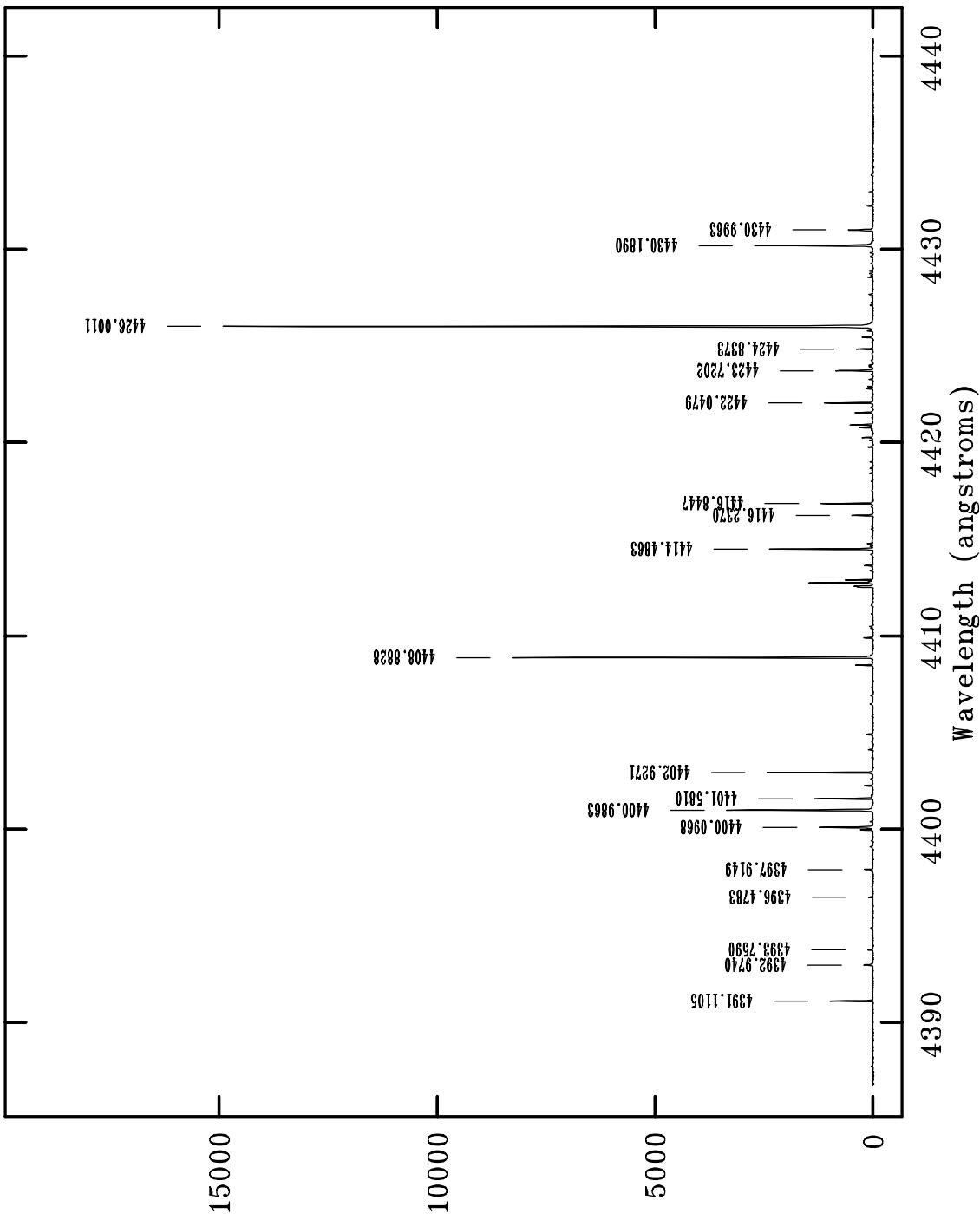
Echelle Order = 136

NOAO / IRAF V2.11.3EXPORT honda@hds Mon 15:04:47 18-Sep-2000
Aperture 19, Image line 19, Order 136
ecidentity 080: UNKNOWN



Echelle Order = 135

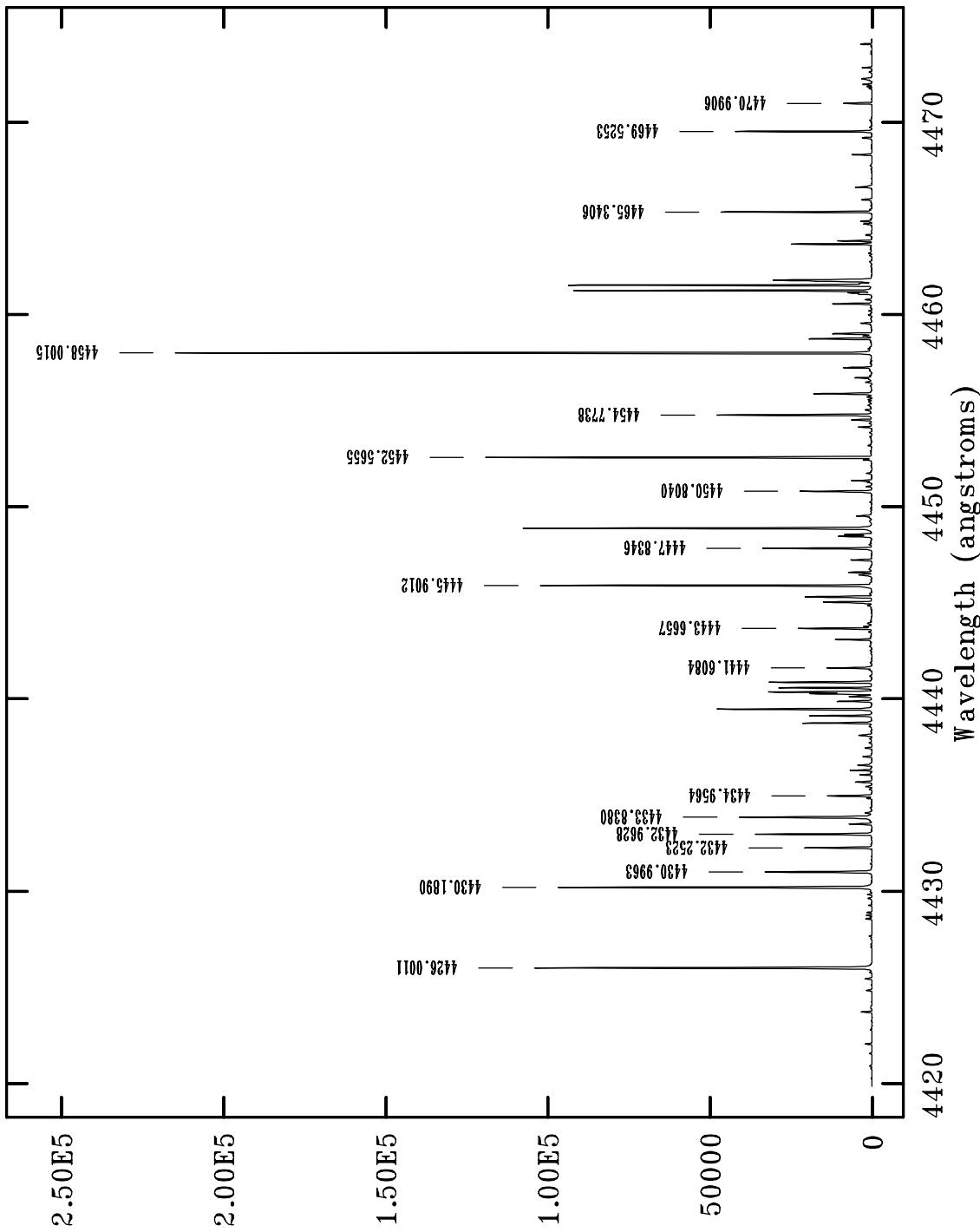
NOAO / IRAF V2.11.3EXPORT honda@hds Mon 15:03:07 18-Sep-2000
Aperture 18, Image line 18, Order 134
identify 080: UNKNOWN



Echelle Order = 134

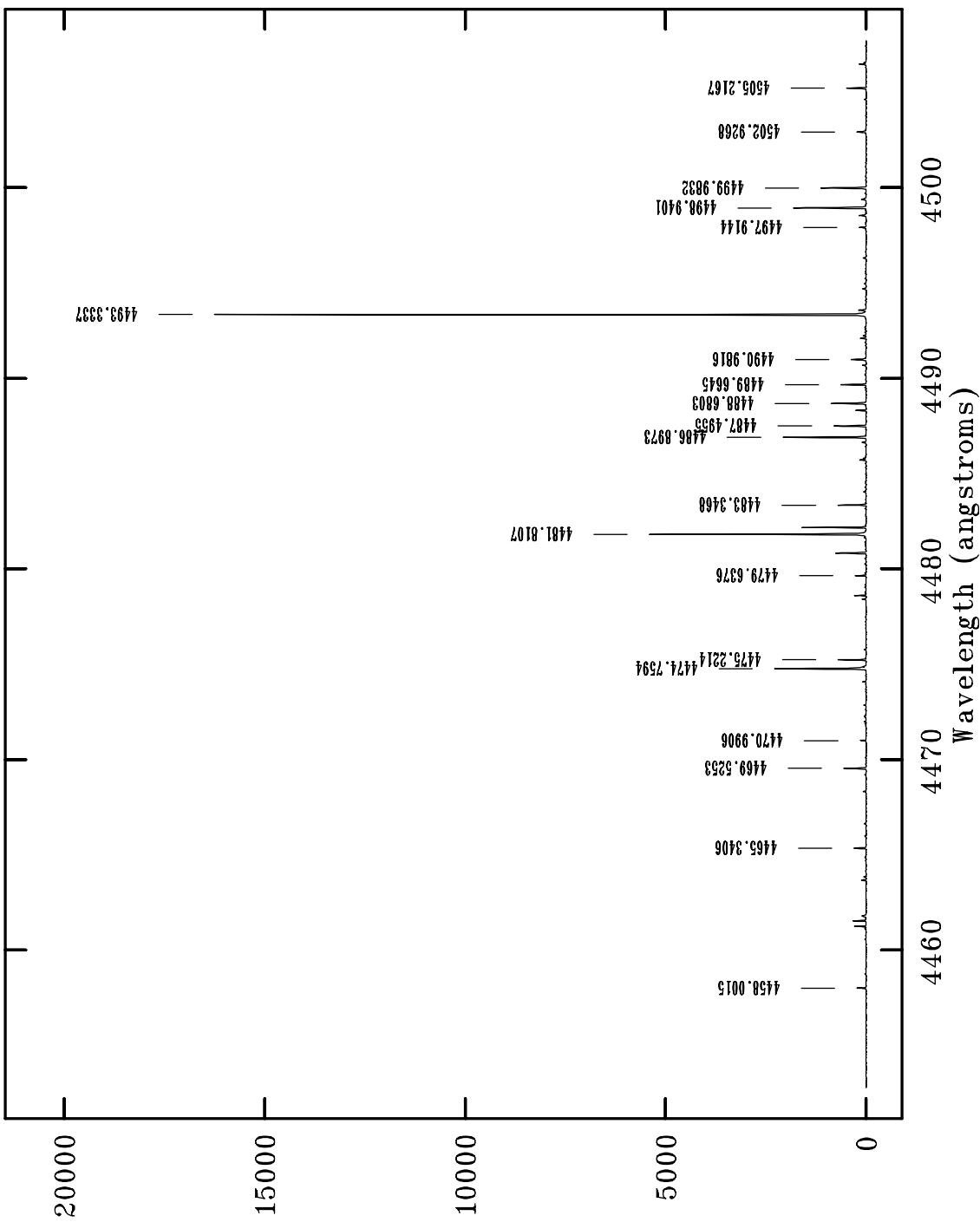


ecture 18, Image Line 18, Order 1:
eidentify eci455: COMPARISON



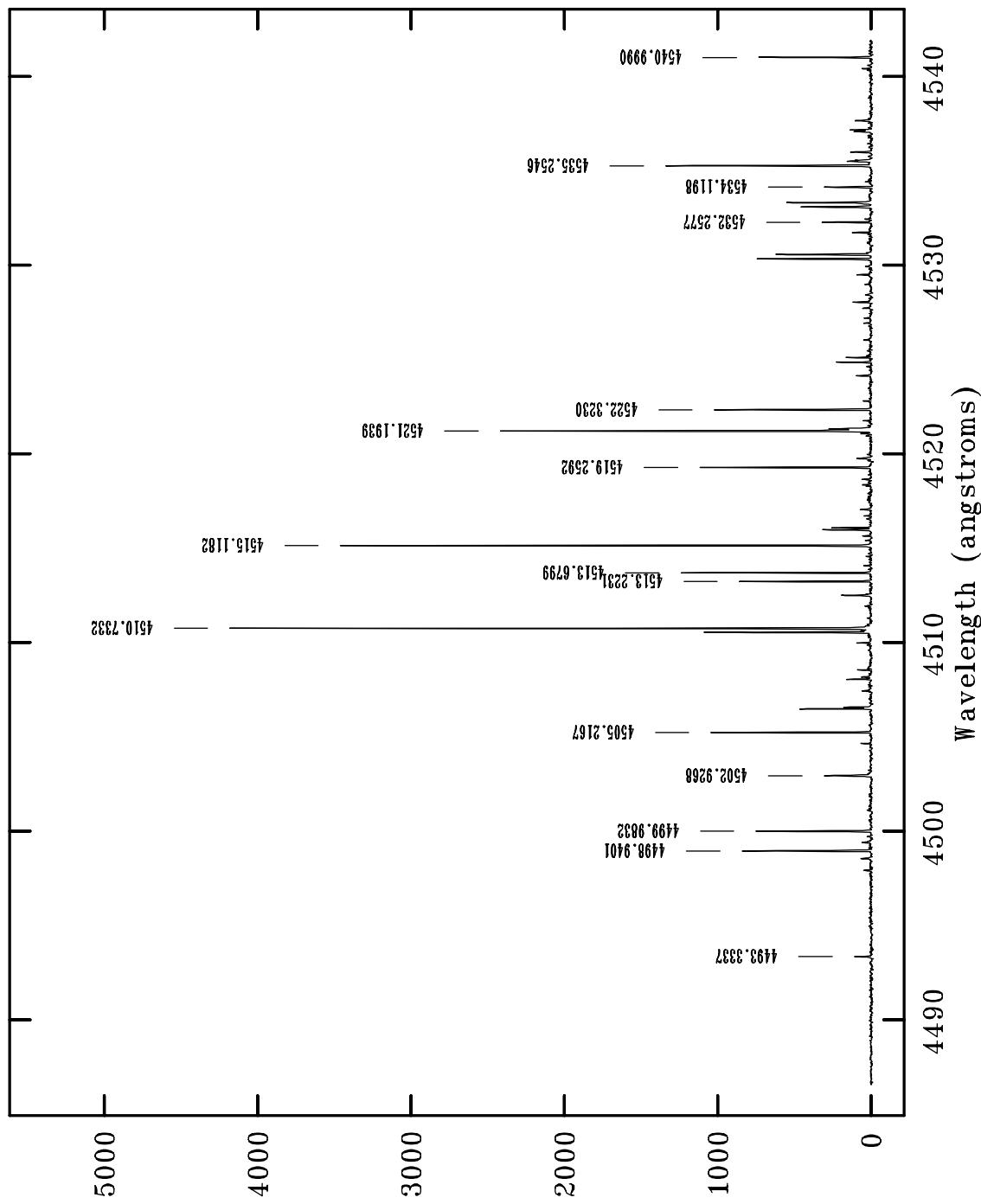
Echelle Order = 133

NOAO / IRAF V2.11.3EXPORT honda@hds Mon 14:48:27 18-Sep-2000
Aperture 16, Image line 16, Order 132
identify 080: UNKNOWN



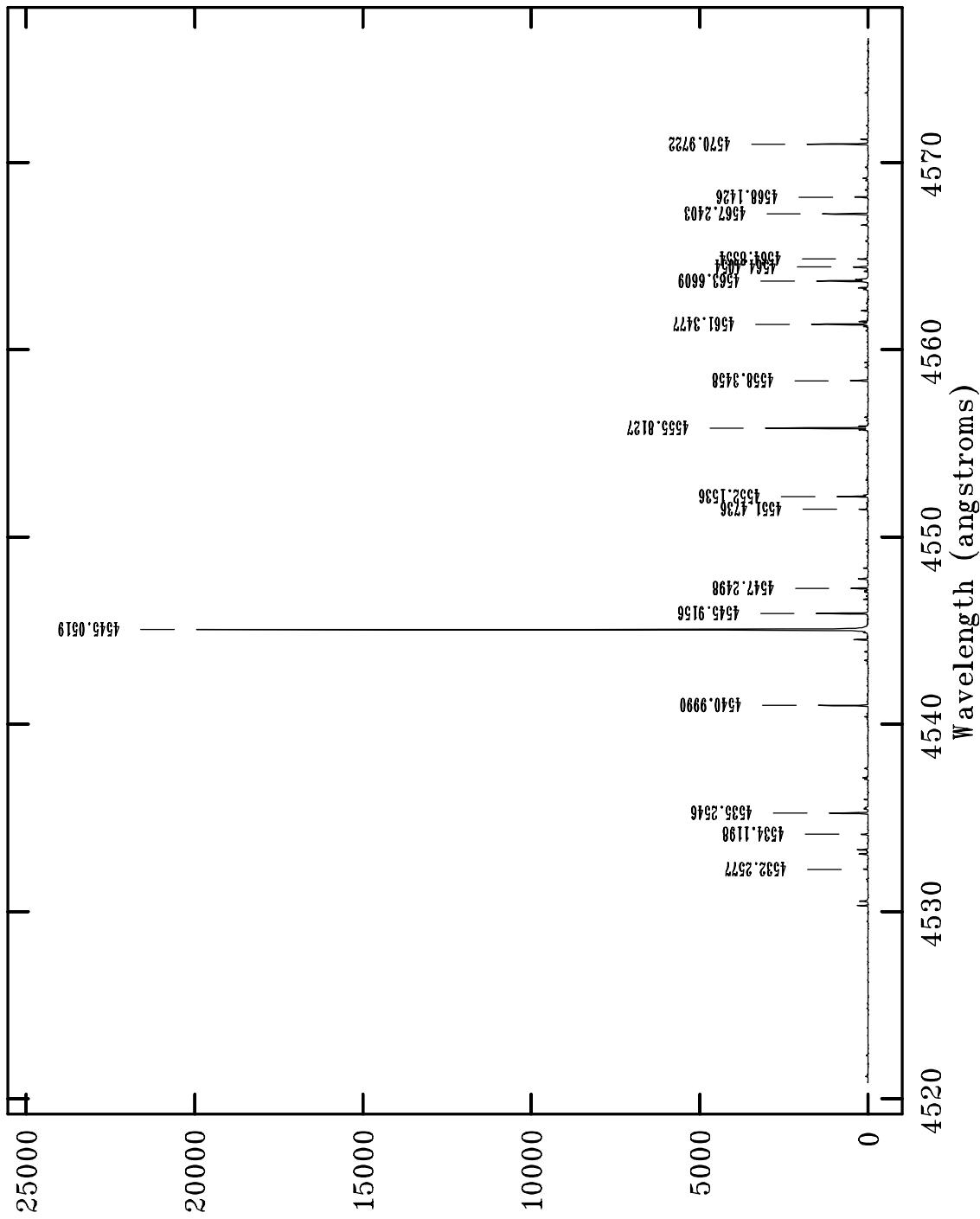
Echelle Order = 132

NOAO/IRAF V2.11.3EXPORT honda@hds Mon 14:31:53 18-Sep-2000
Aperture 15, Image line 15, Order 131
identify 080: UNKNOWN



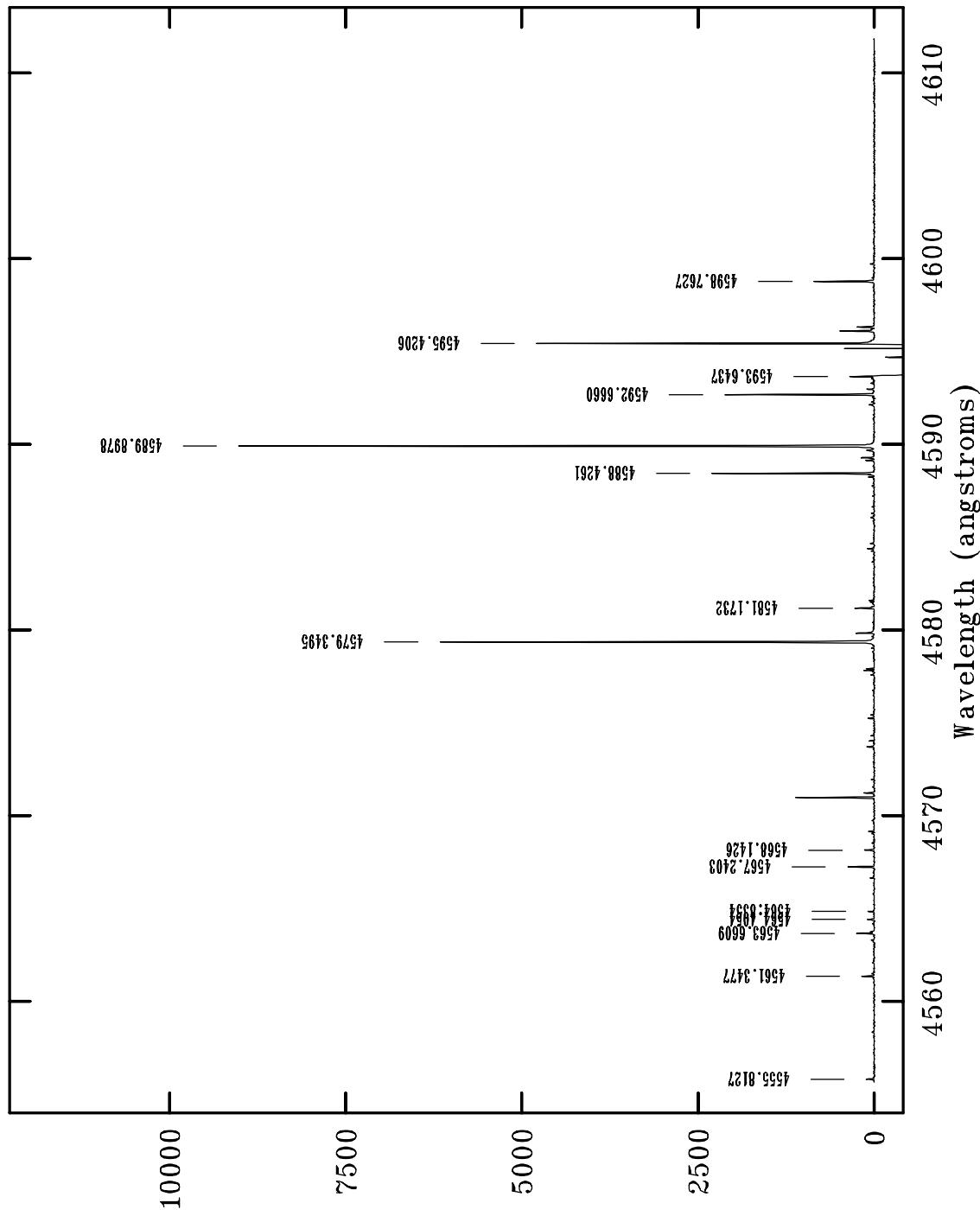
Echelle Order = 131

NOAO / IRAF V2.11.3EXPORT honda@hds Mon 14:24:28 18-Sep-2000
Aperture 14, Image line 14, Order 130
identify 080: UNKNOWN



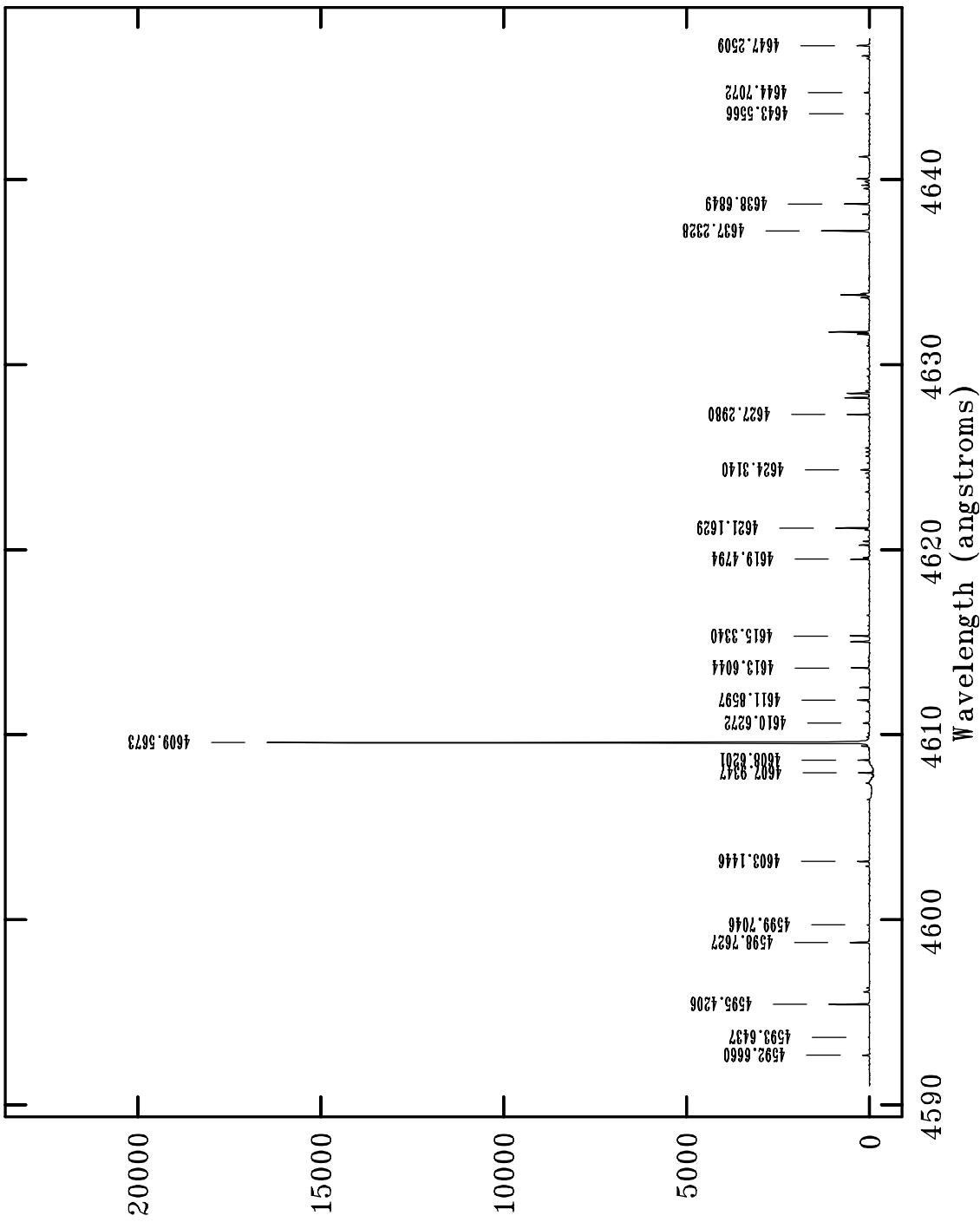
Echelle Order = 130

NOAO / IRAF V2.11.3EXPORT honda@hds Mon 14:22:00 18-Sep-2000
Aperture 13, Image line 13, Order 129
ecidentify 080: UNKNOWN



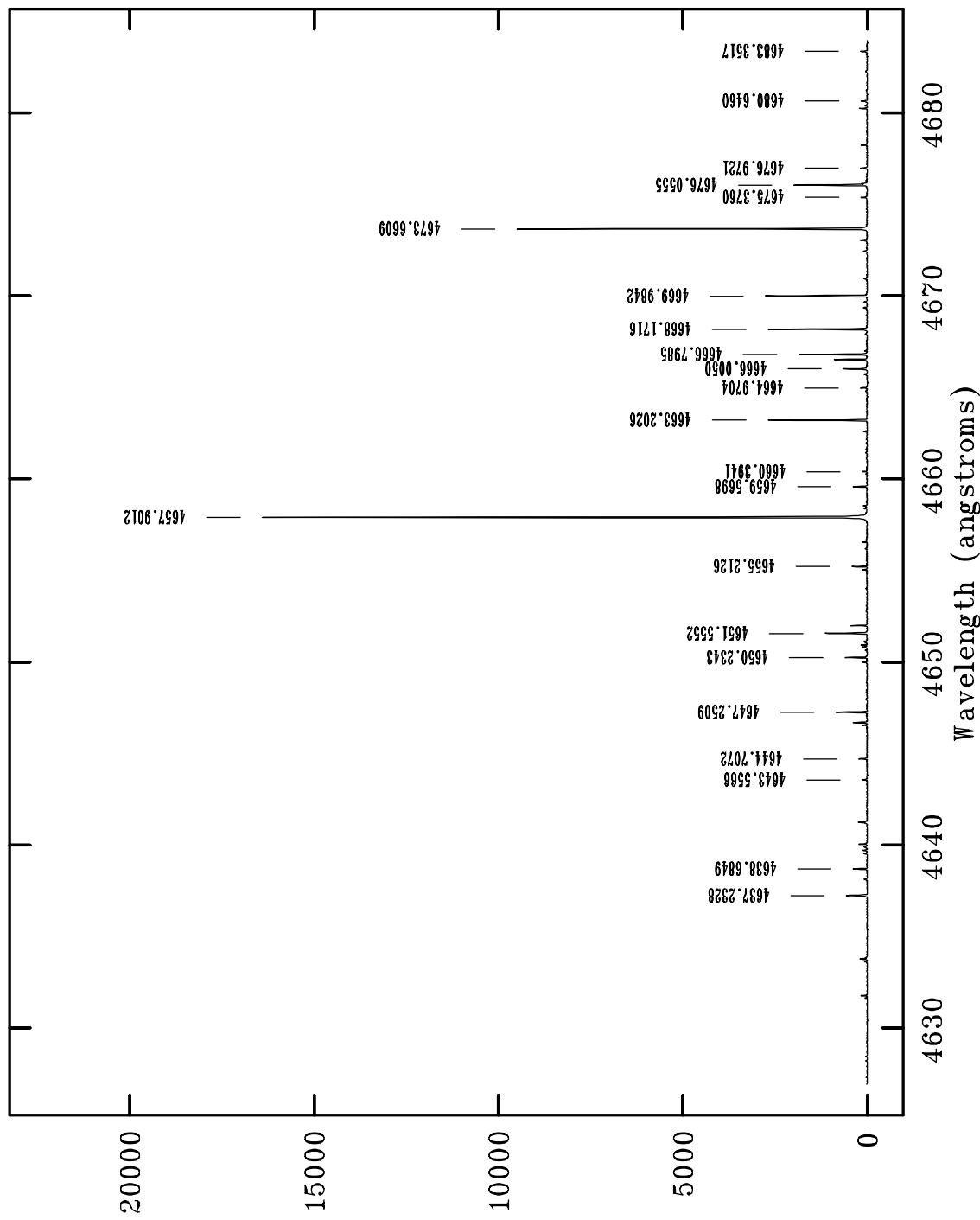
Echelle Order = 129

NOAO/IRAF V2.11.3EXPORT honda@hds Mon 14:13:17 18-Sep-2000
Aperture 12, Image line 12, Order 128
identify 080: UNKNOWN



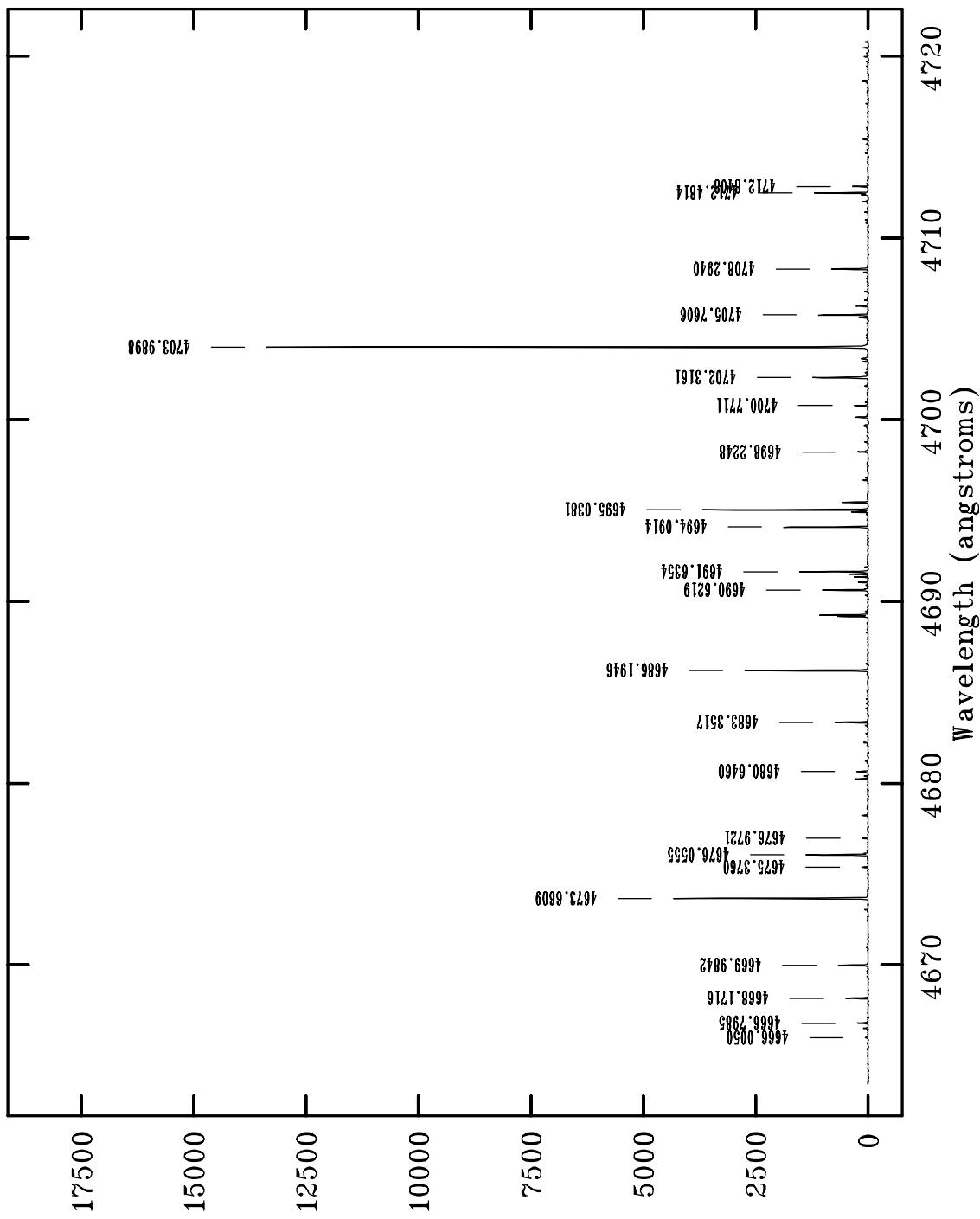
Echelle Order = 128

NOAO/IRAF V2.11.3EXPORT honda@hds Mon 14:09:11 18-Sep-2000
Aperture 11, Image line 11 Order 127
ecidentify 080: UNKNOWN



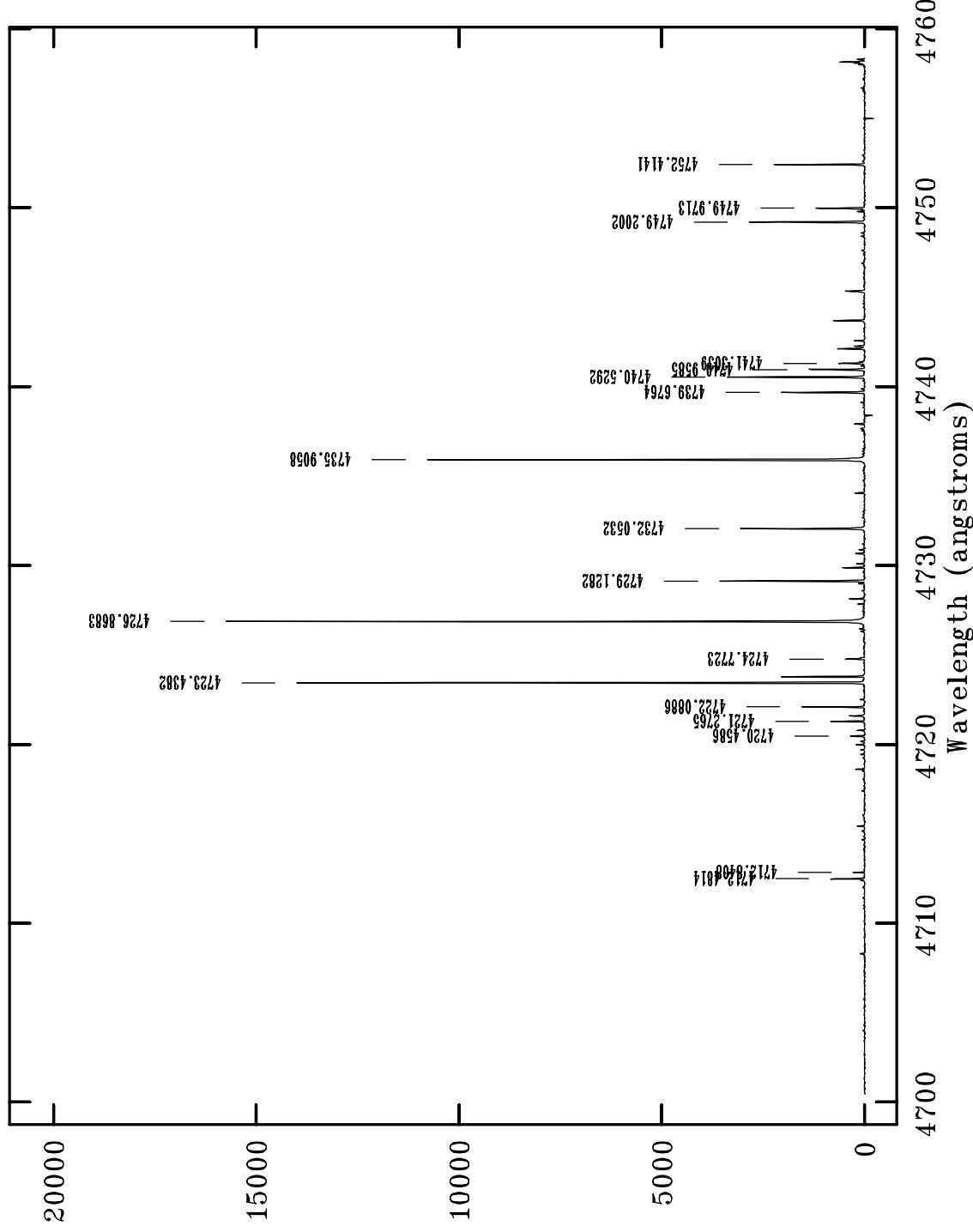
Echelle Order = 127

NOAO / IRAF V2.11.3EXPORT honda@hds Aperture 10, Image line 10, Order 126
ecidify 080: UNKNOWN



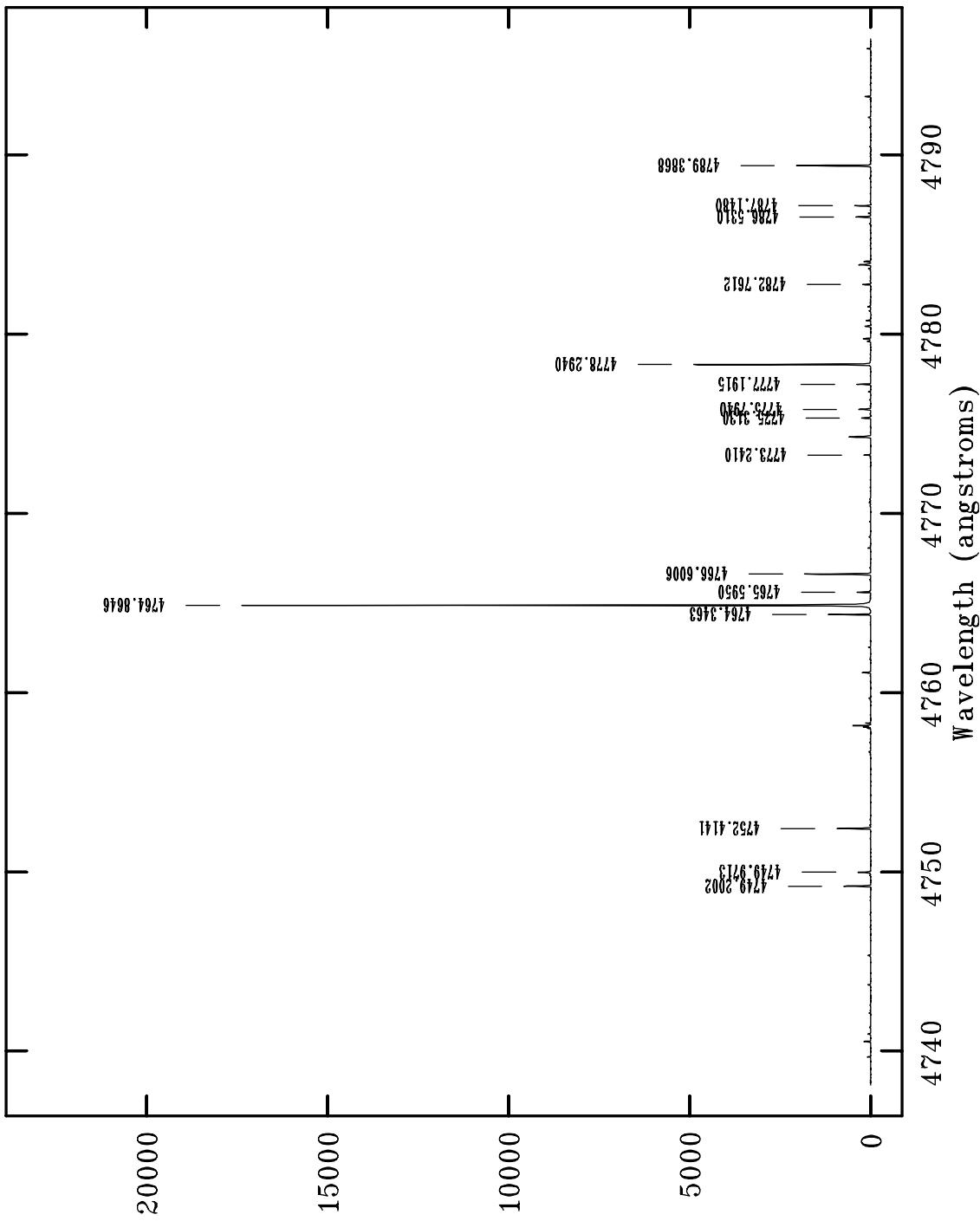
Echelle Order = 126

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 00:46:45 14-Sep-2000
Aperture 9, Image line 9, Order 125
ecidentify 080: UNKNOWN



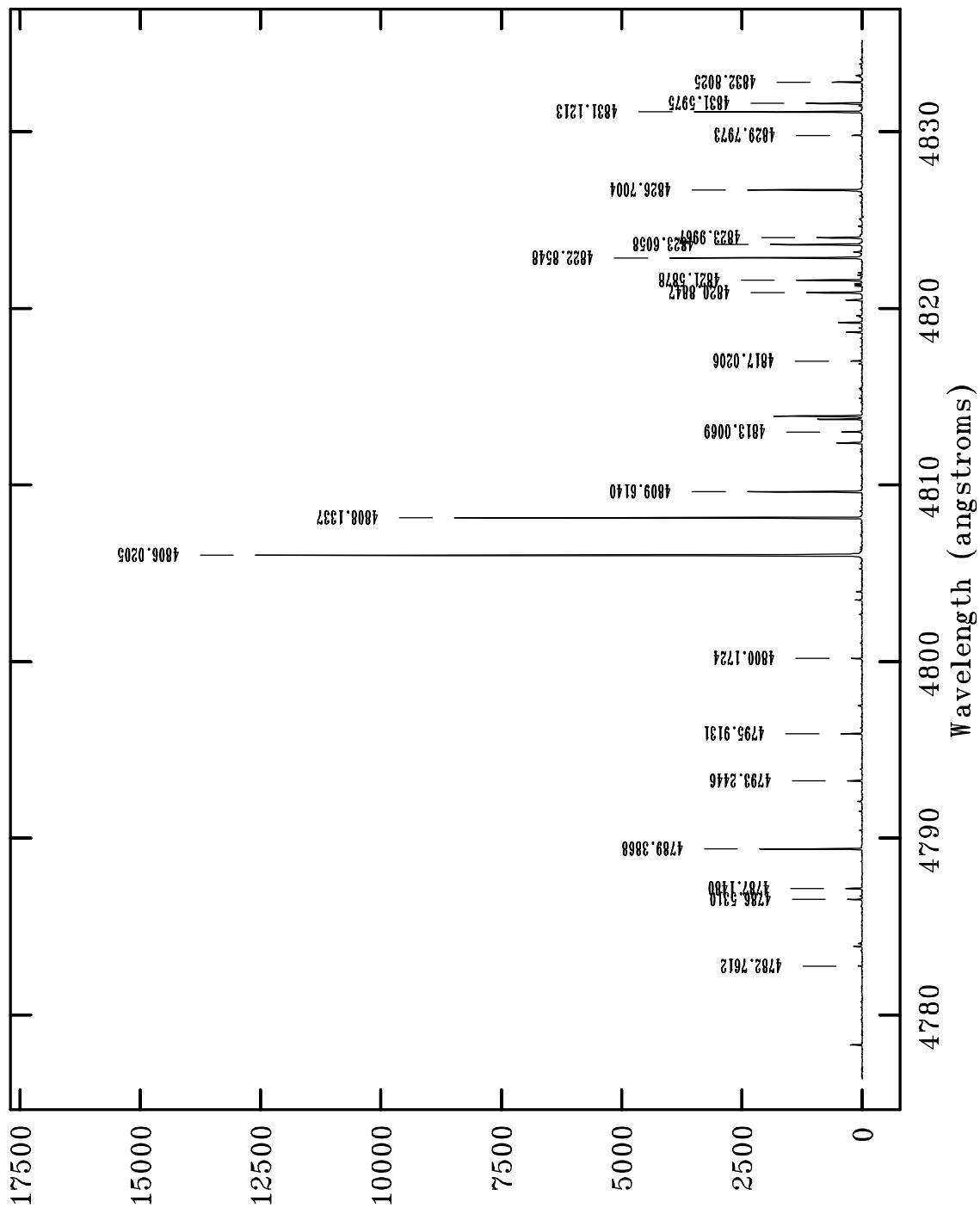
Echelle Order = 125

NOAO / IRAF V2.11.3EXPORT honda@hds Image line 8, Order 124
Aperture 8, Identifier 080: UNKNOWN



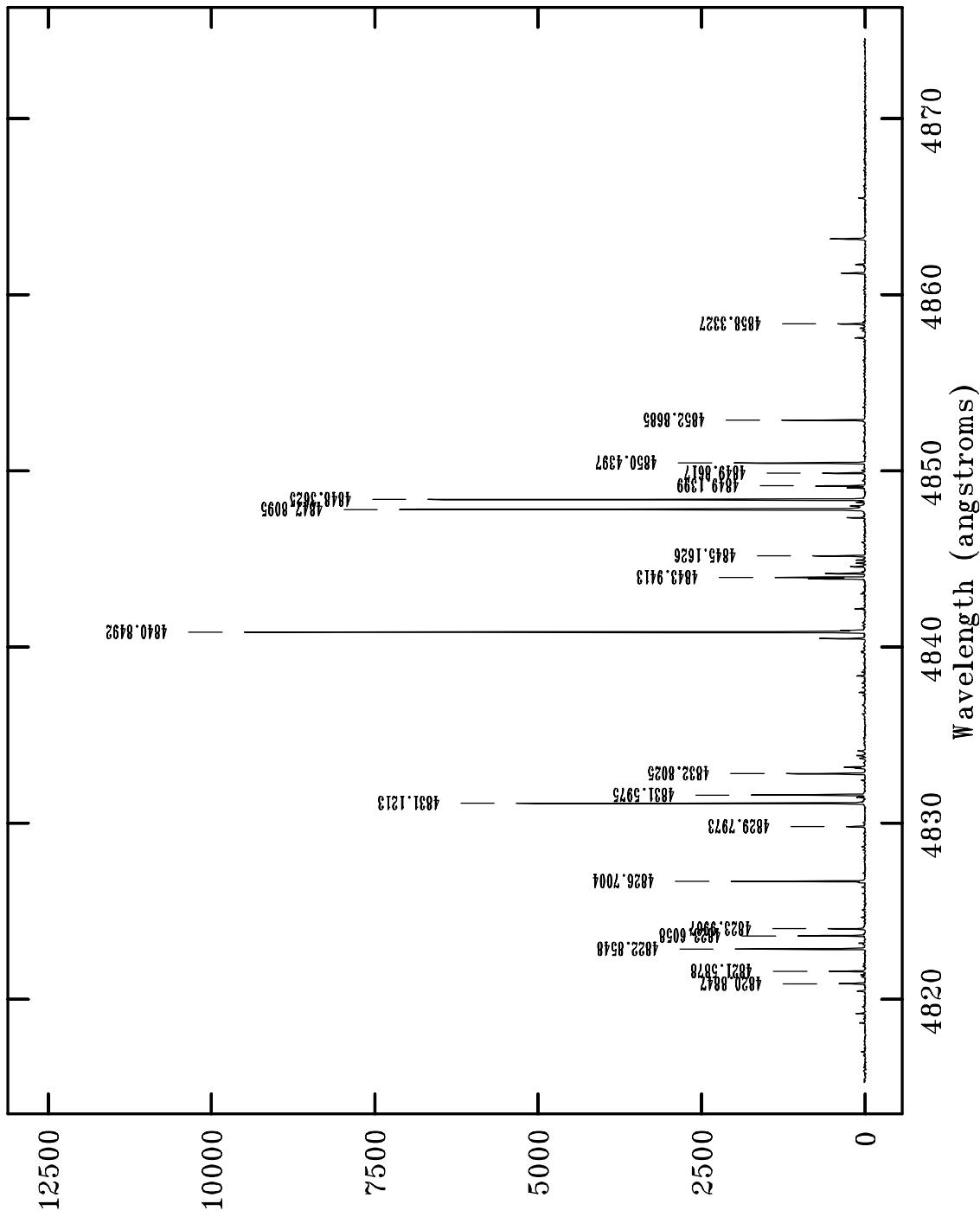
Echelle Order = 124

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 00:42:32 14-Sep-2000
Aperture 7, Image line 7 Order 123
ecidentify 080: UNKNOWN



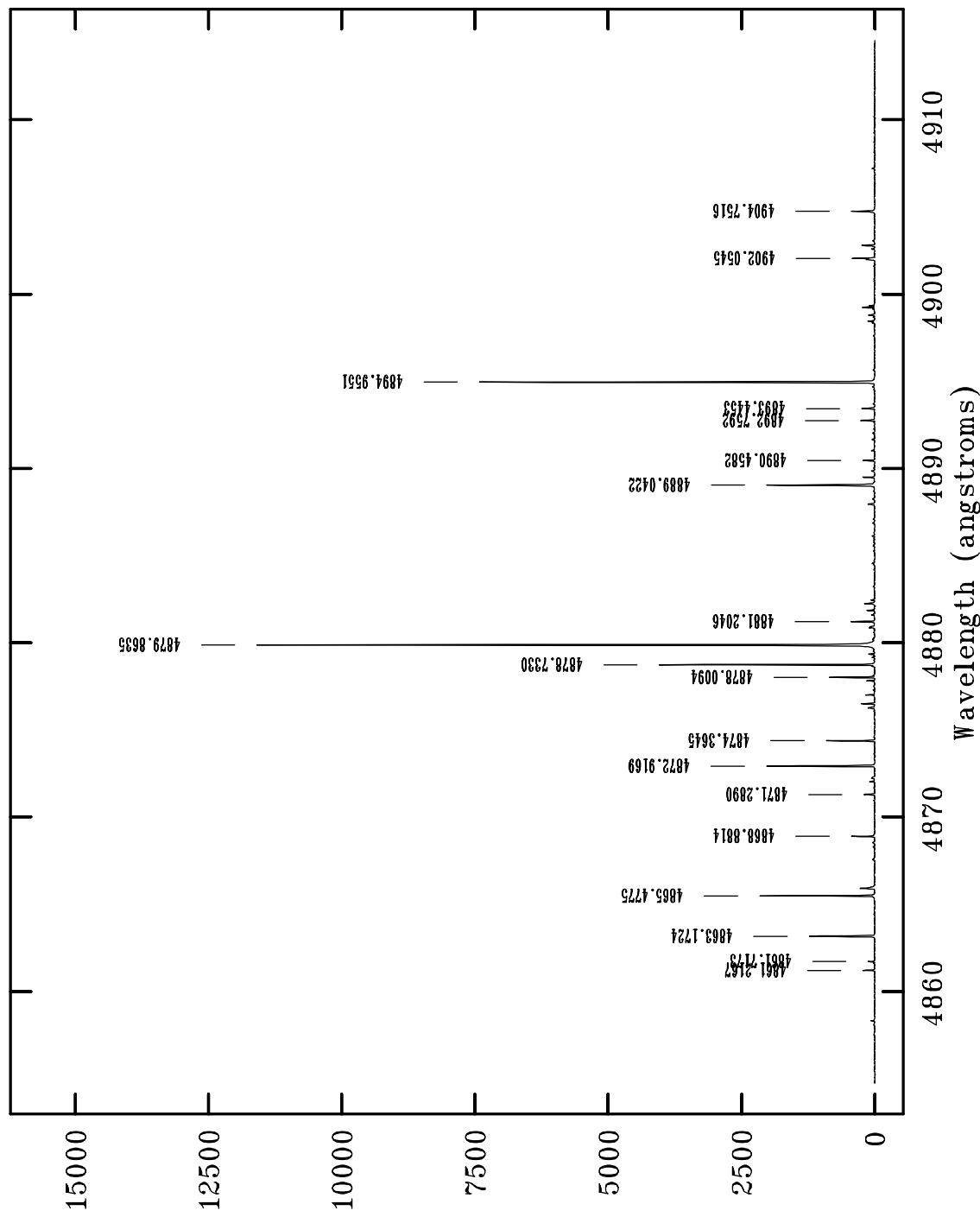
Echelle Order = 123

NOAO / IRAF V2.11.3EXPORT honda@hds Image line 6, Order 122
Aperture 6, Identifier 080: UNKNOWN



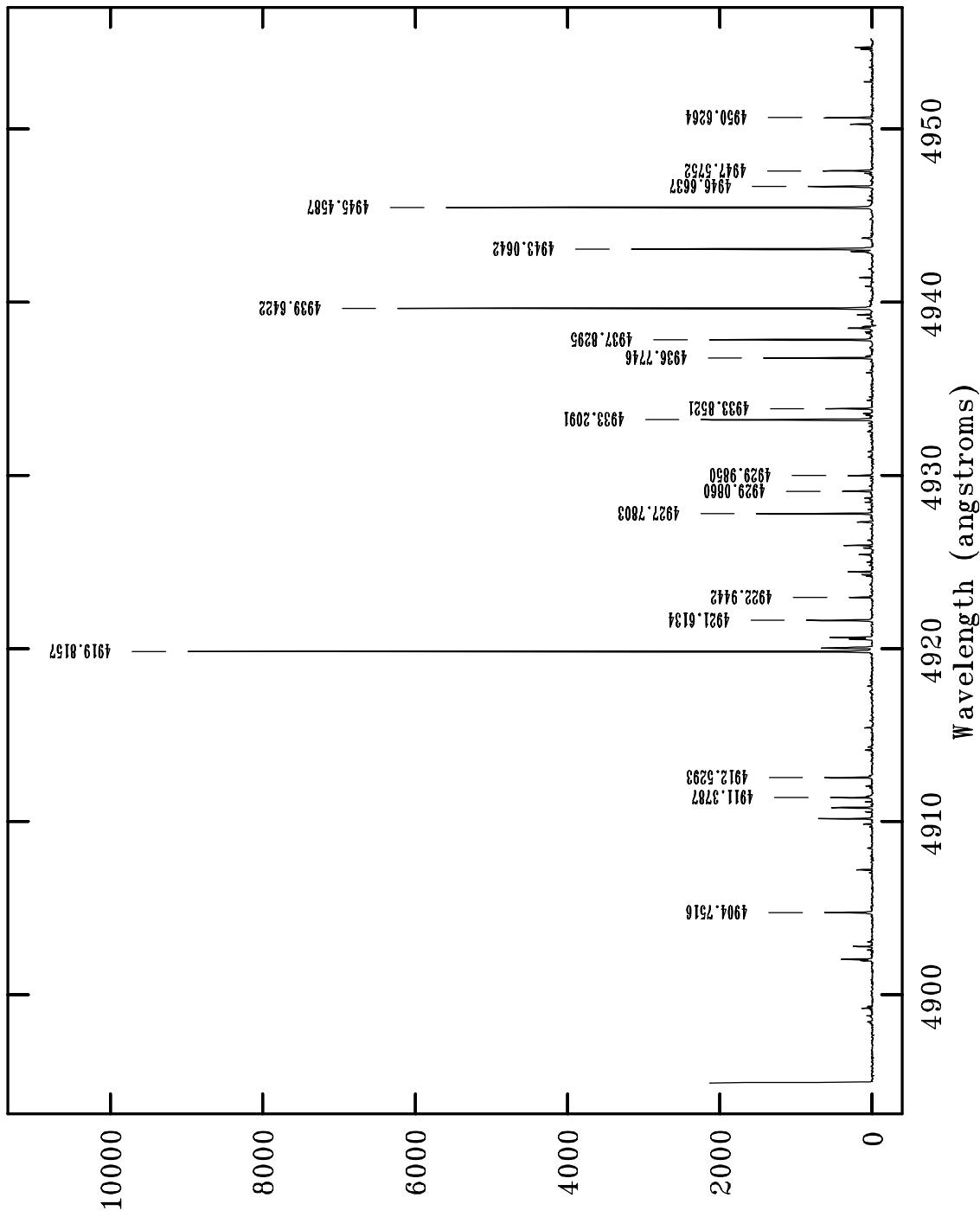
Echelle Order = 122

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 00:32:14 14-Sep-2000
Aperture 5, Image line 5 Order 121 UNKNOWN
identify 080:



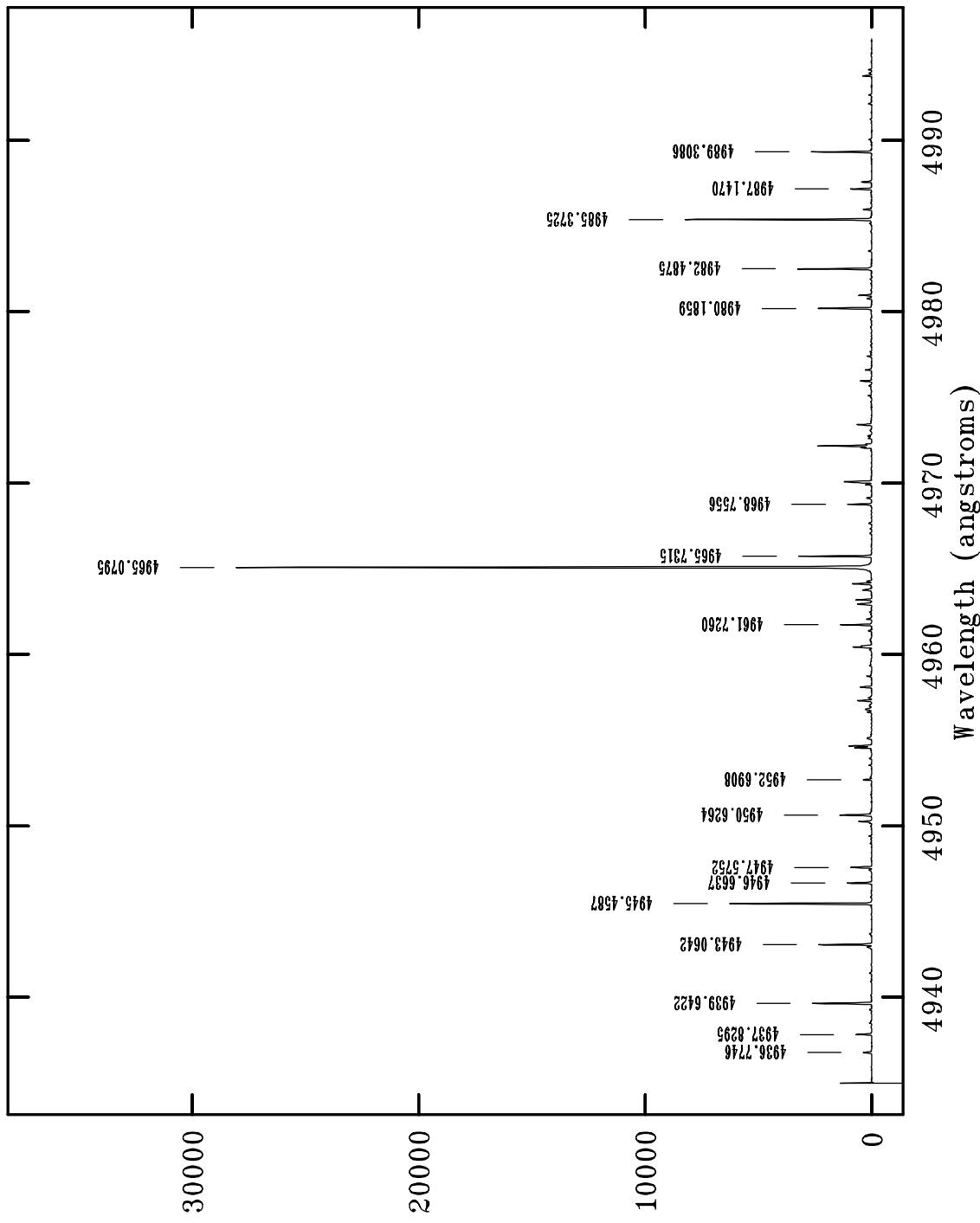
Echelle Order = 121

NOAO / IRAF V2.11.3EXPORT honda@hds Image line 4, Order 120
Aperture 4, Identifier 080: UNKNOWN



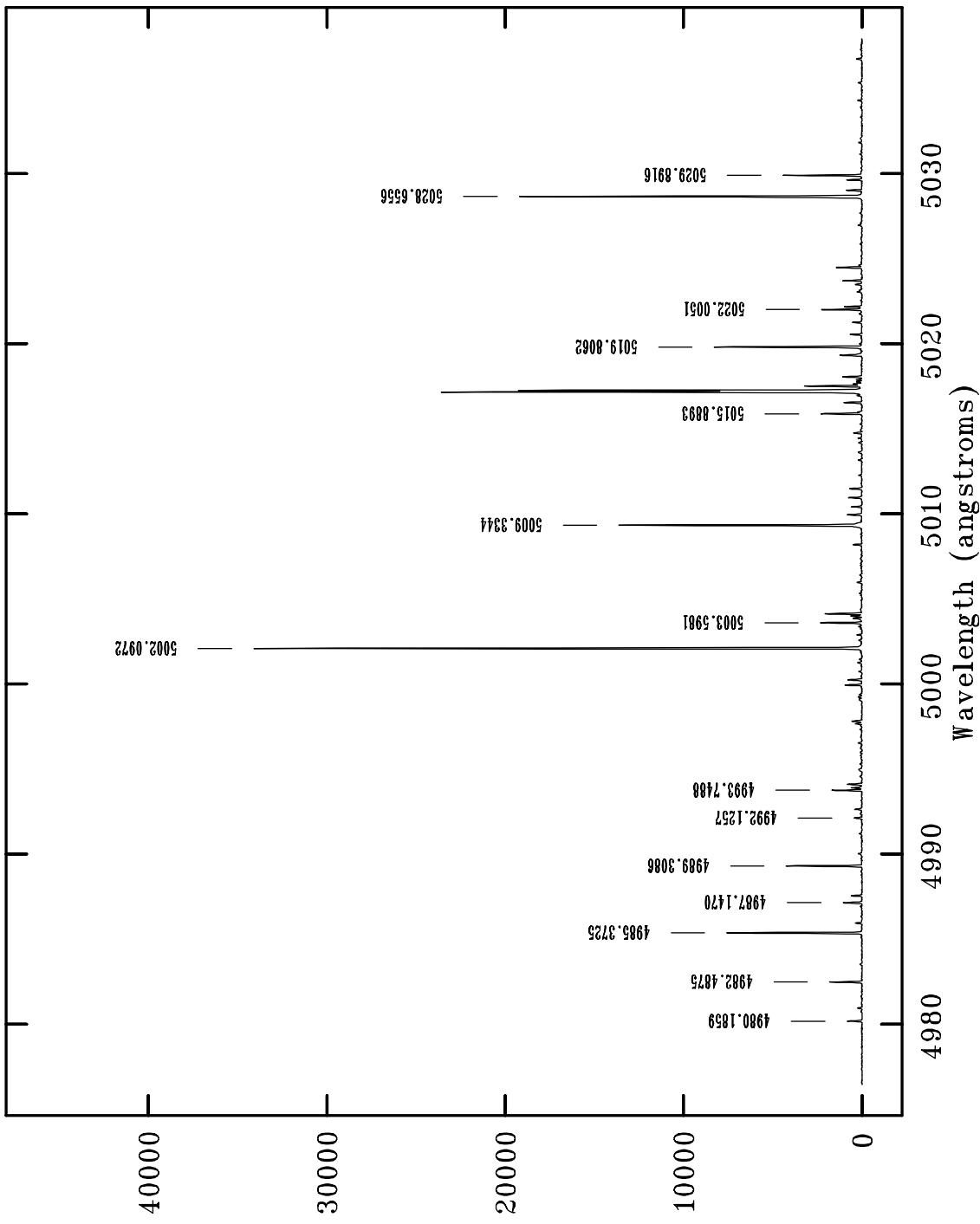
Echelle Order = 120

NOAO/IRAF V2.11.3EXPORT honda@hds Thu 00:25:50 14-Sep-2000
Aperture 25, Image line 25, Order 120 UNKNOWN
identify 077:



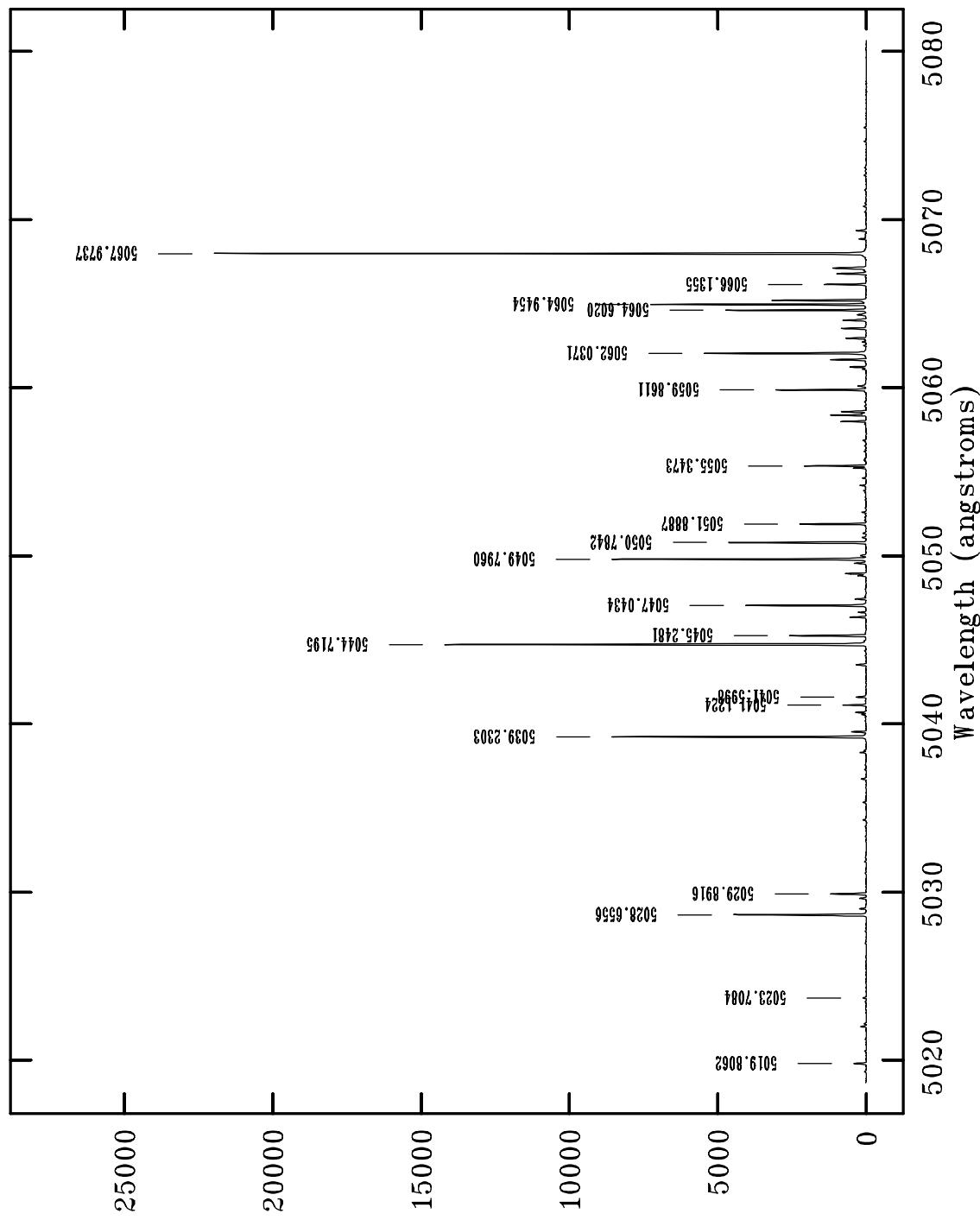
Echelle Order = 119

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 21:50:57 30-Nov-2000
Aperture 24, Image line 24, Order 119
identify 077: UNKNOWN



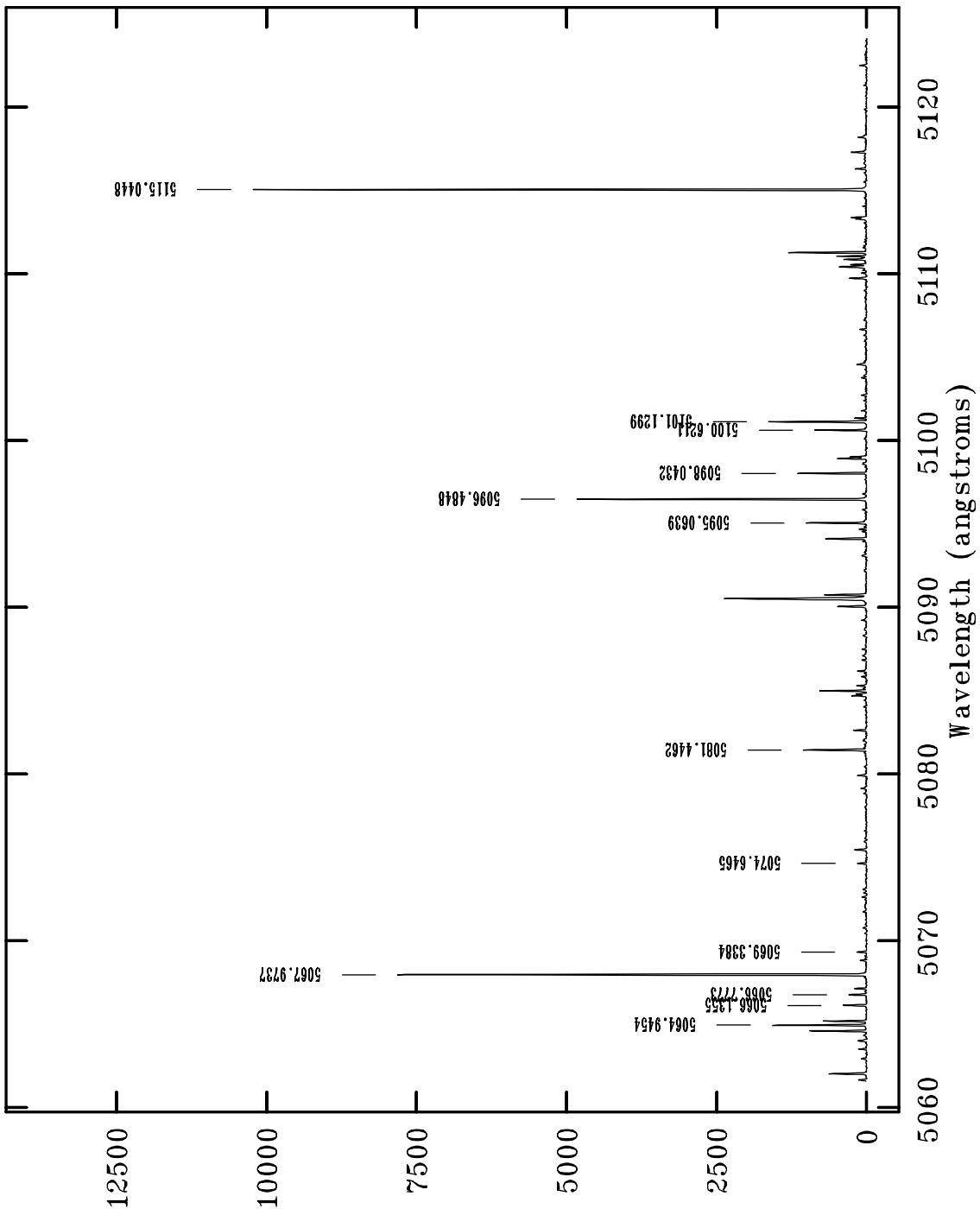
Echelle Order = 118

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 00:21:22 14-Sep-2000
Aperture 23, Image line 23, Order 118
identify 077: UNKNOWN



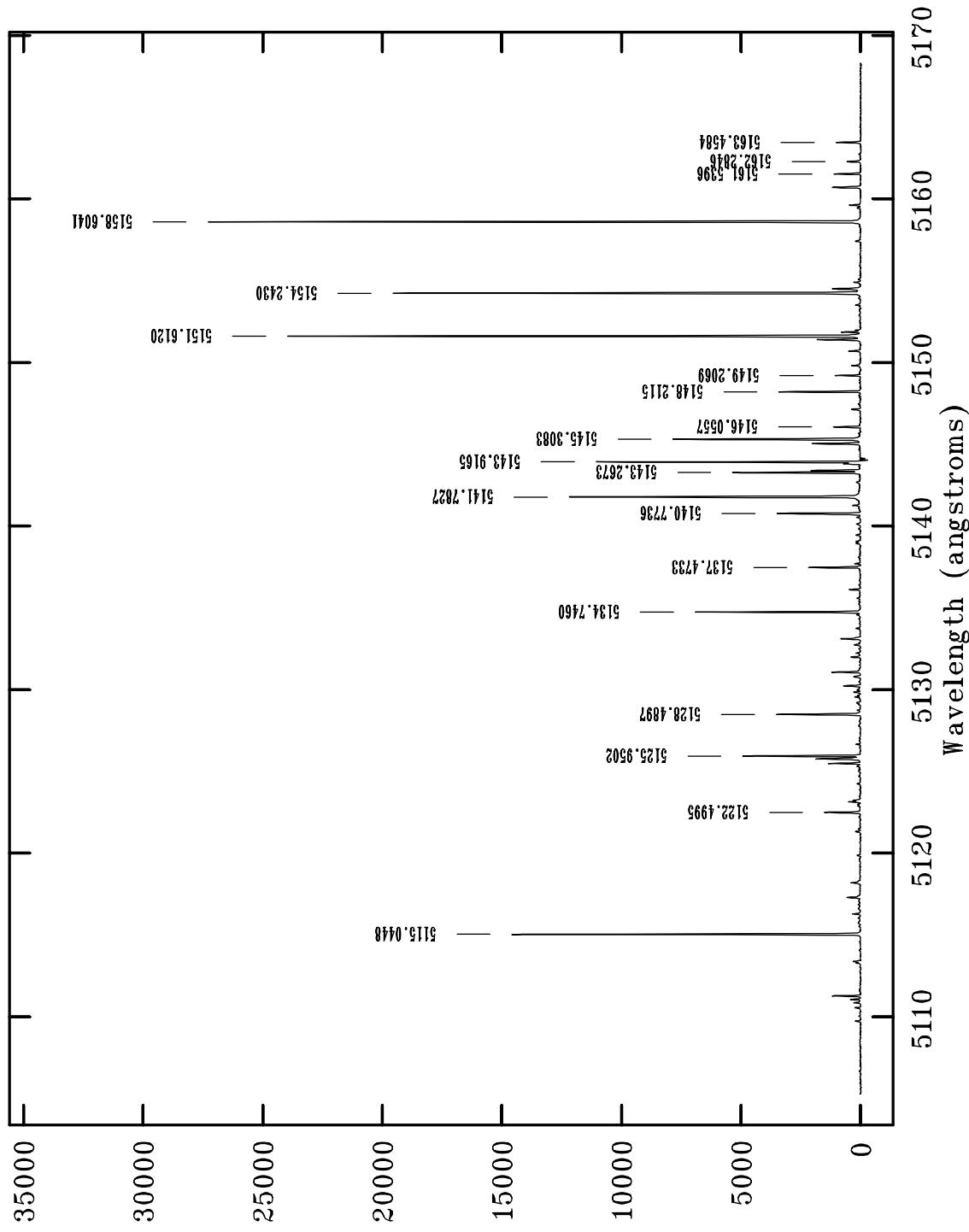
Echelle Order = 117

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 00:10:14 14-Sep-2000
Aperture 22, Image line 22, Order 117
ecidify 077: UNKNOWN



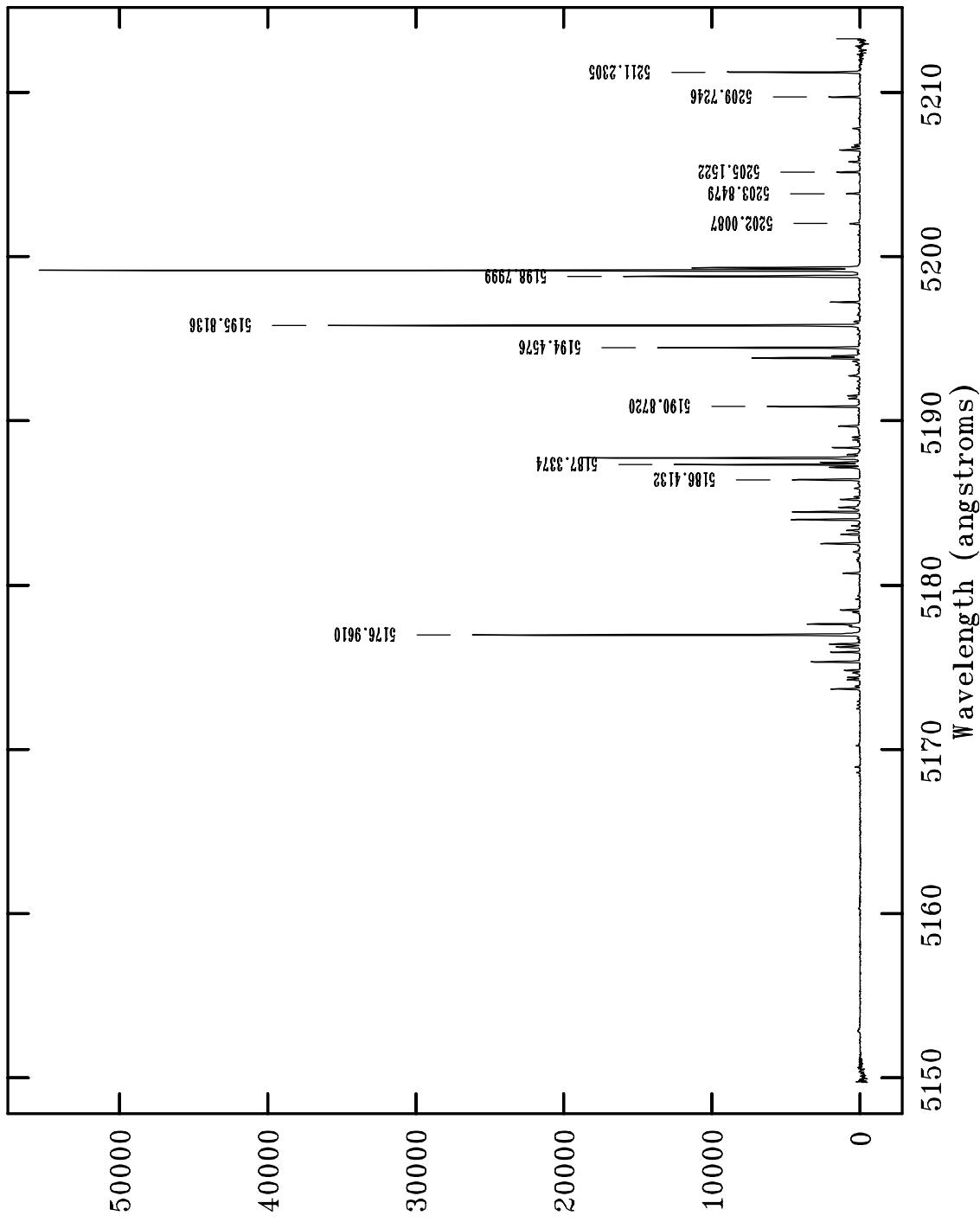
Echelle Order = 116

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 00:08:02 14-Sep-2000
Aperture 21, Image line 21, Order 116
ecidentify 077: UNKNOWN



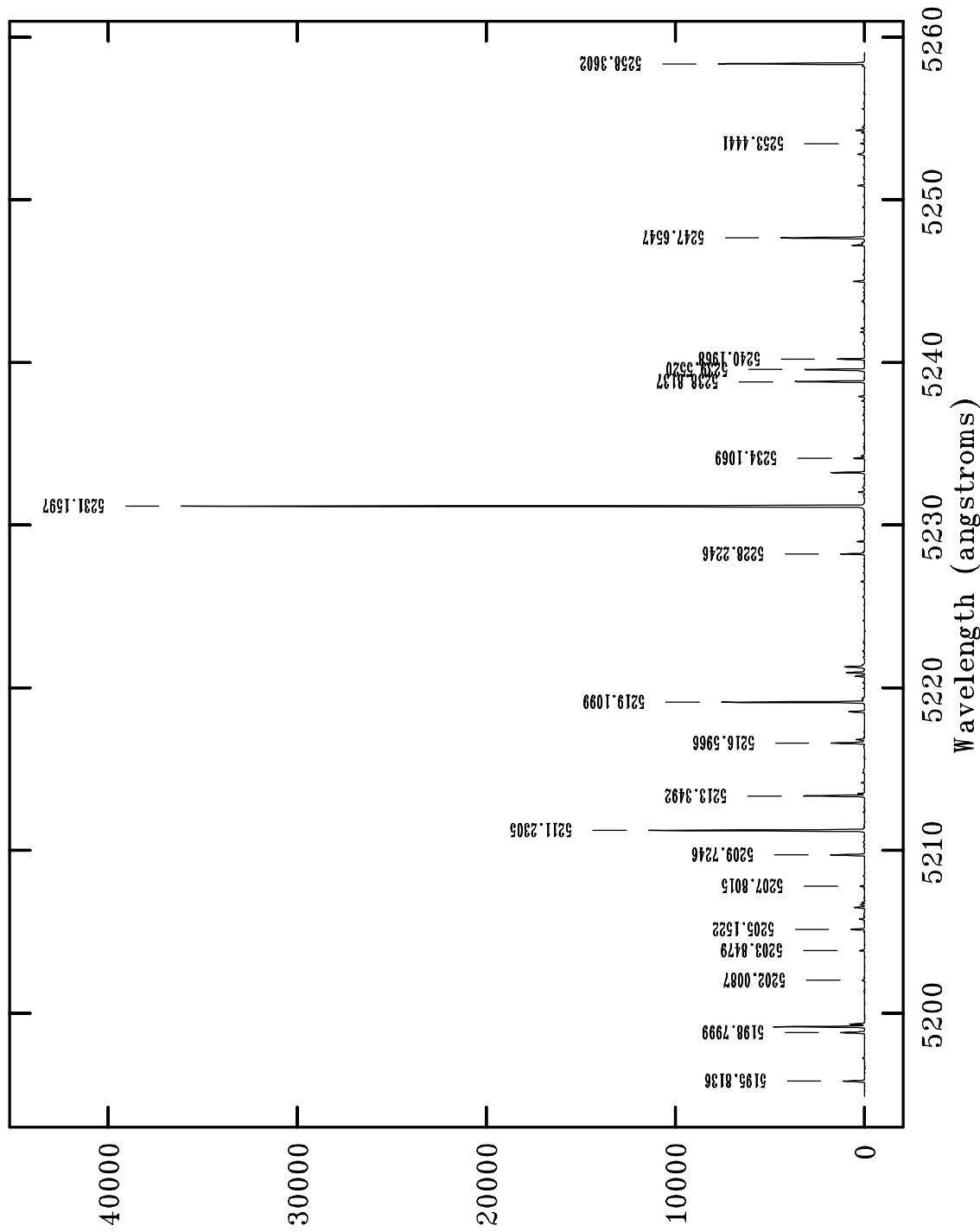
Echelle Order = 115

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 21:49:58 30-Nov-2000
Aperture 20, Image line 20, Order 115
identify 077: UNKNOWN



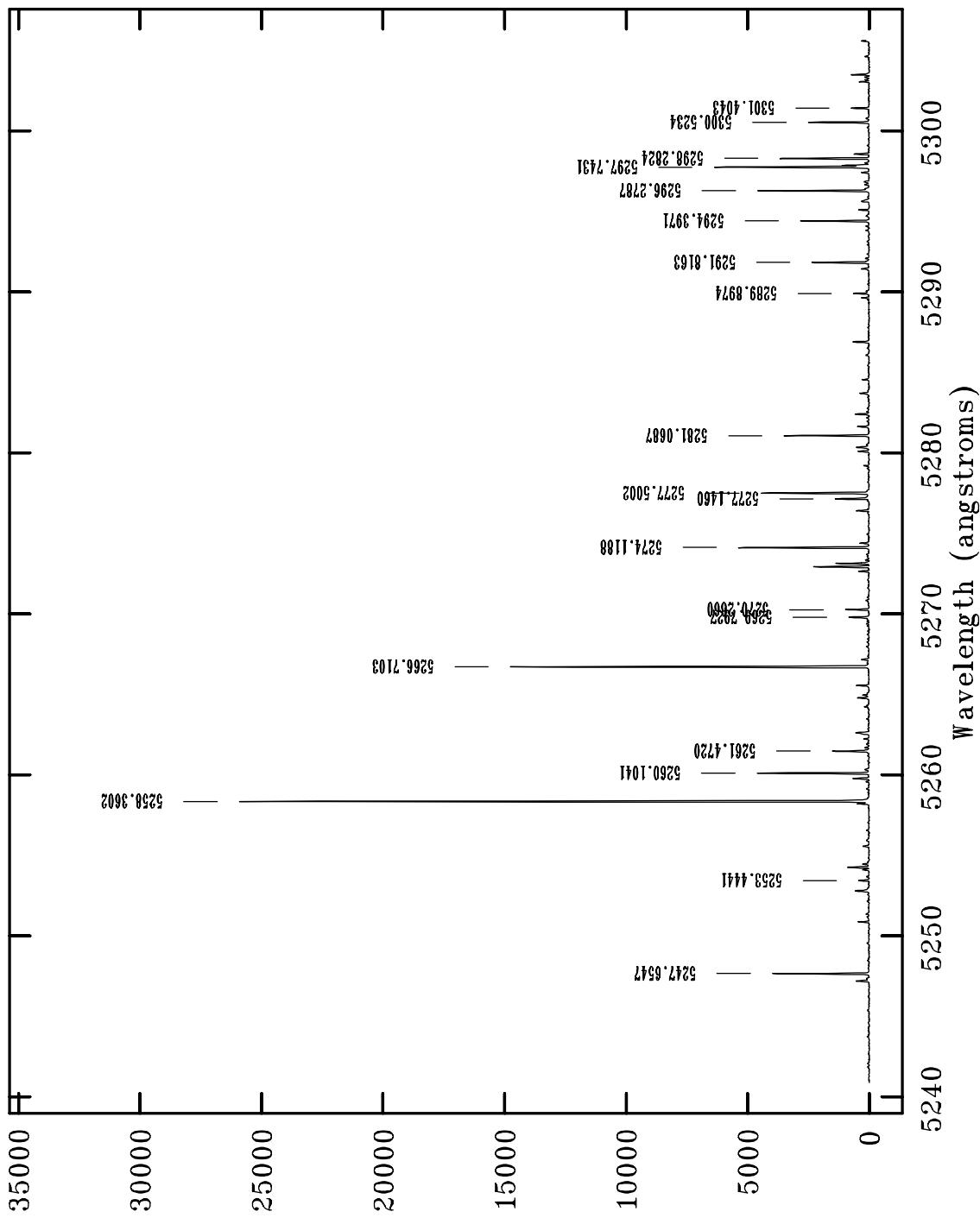
Echelle Order = 114

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 21:49:06 30-Nov-2000
Aperture 19, Image line 19, Order 114
identify 077: UNKNOWN



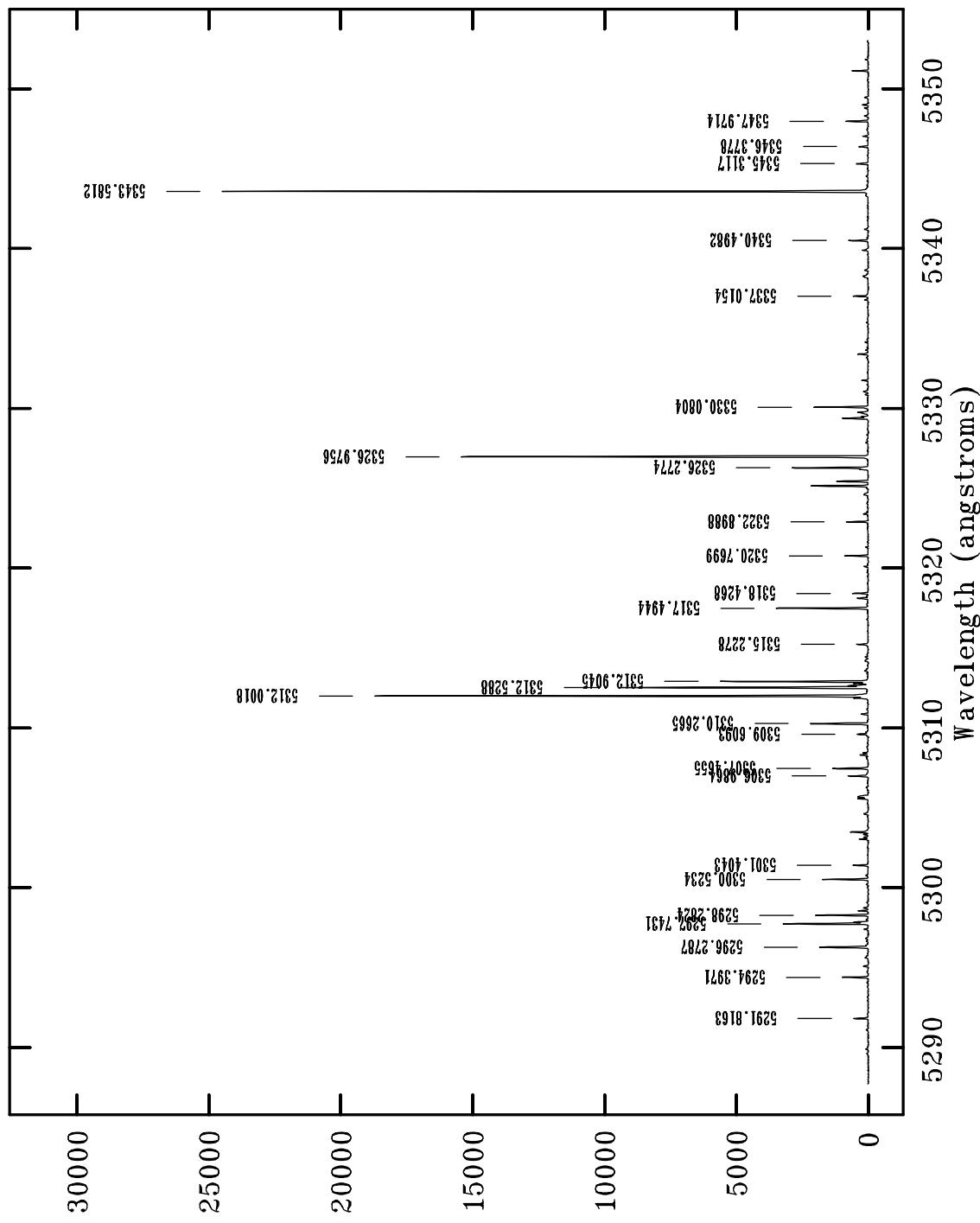
Echelle Order = 113

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 23:48:42 13-Sep-2000
Aperture 18, Image line 18, Order 113
ecidify 077: UNKNOWN



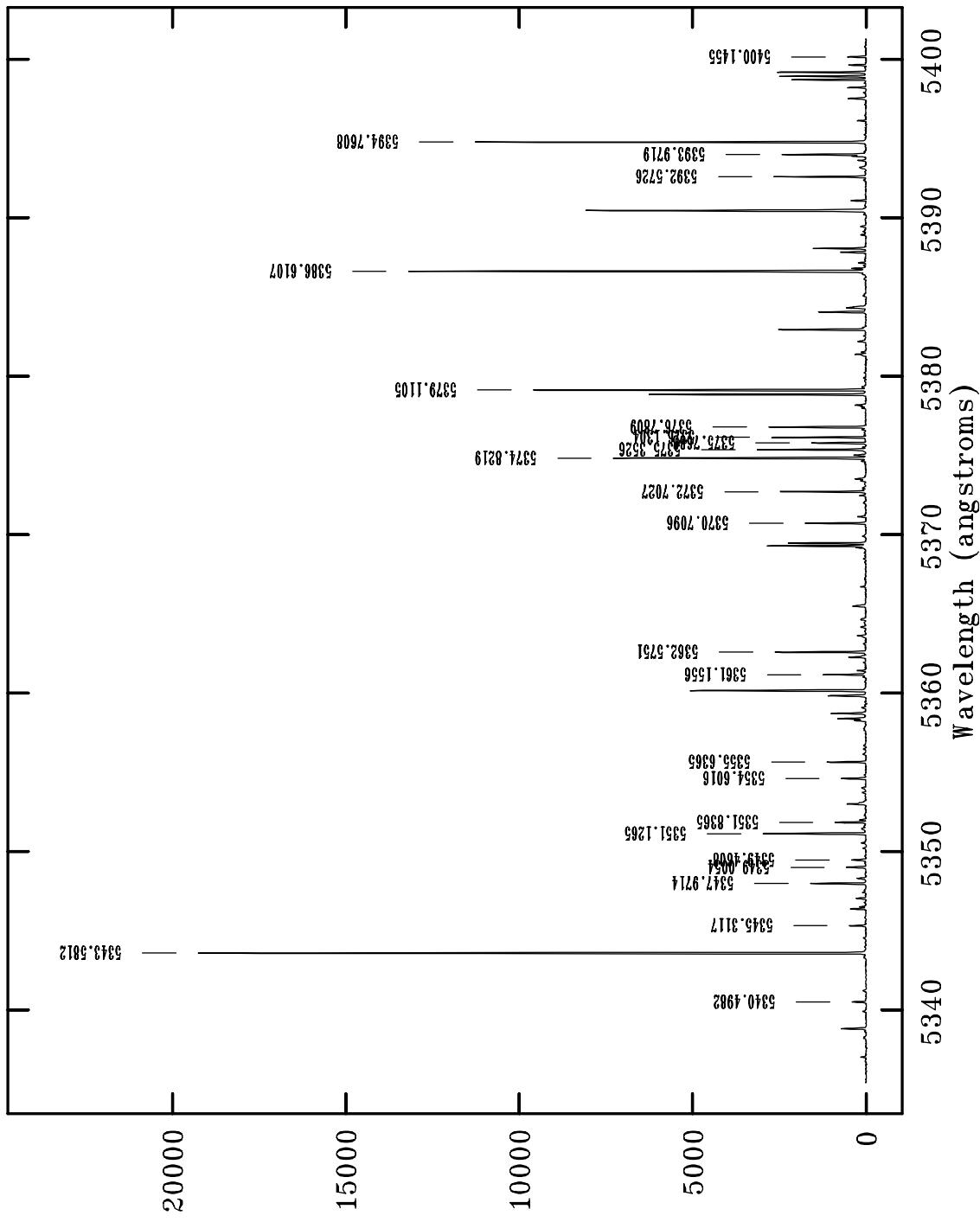
Echelle Order = 112

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 23:43:03 13-Sep-2000
Aperture 17, Image line 17, Order 112
identify 077: UNKNOWN



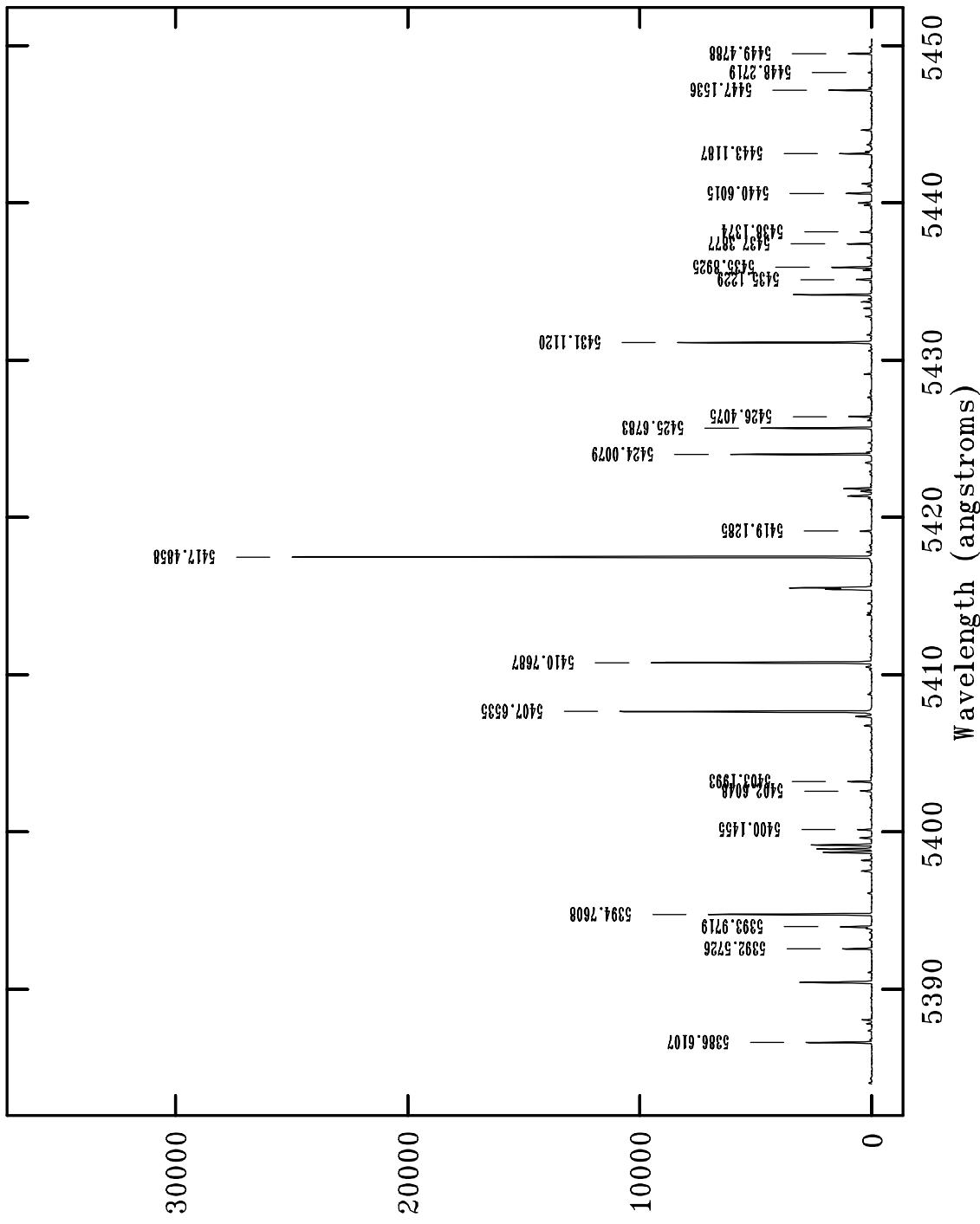
Echelle Order = 111

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 21:47:55 30-Nov-2000
Aperture 16, Image line 16, Order 111
ecidify 077: UNKNOWN



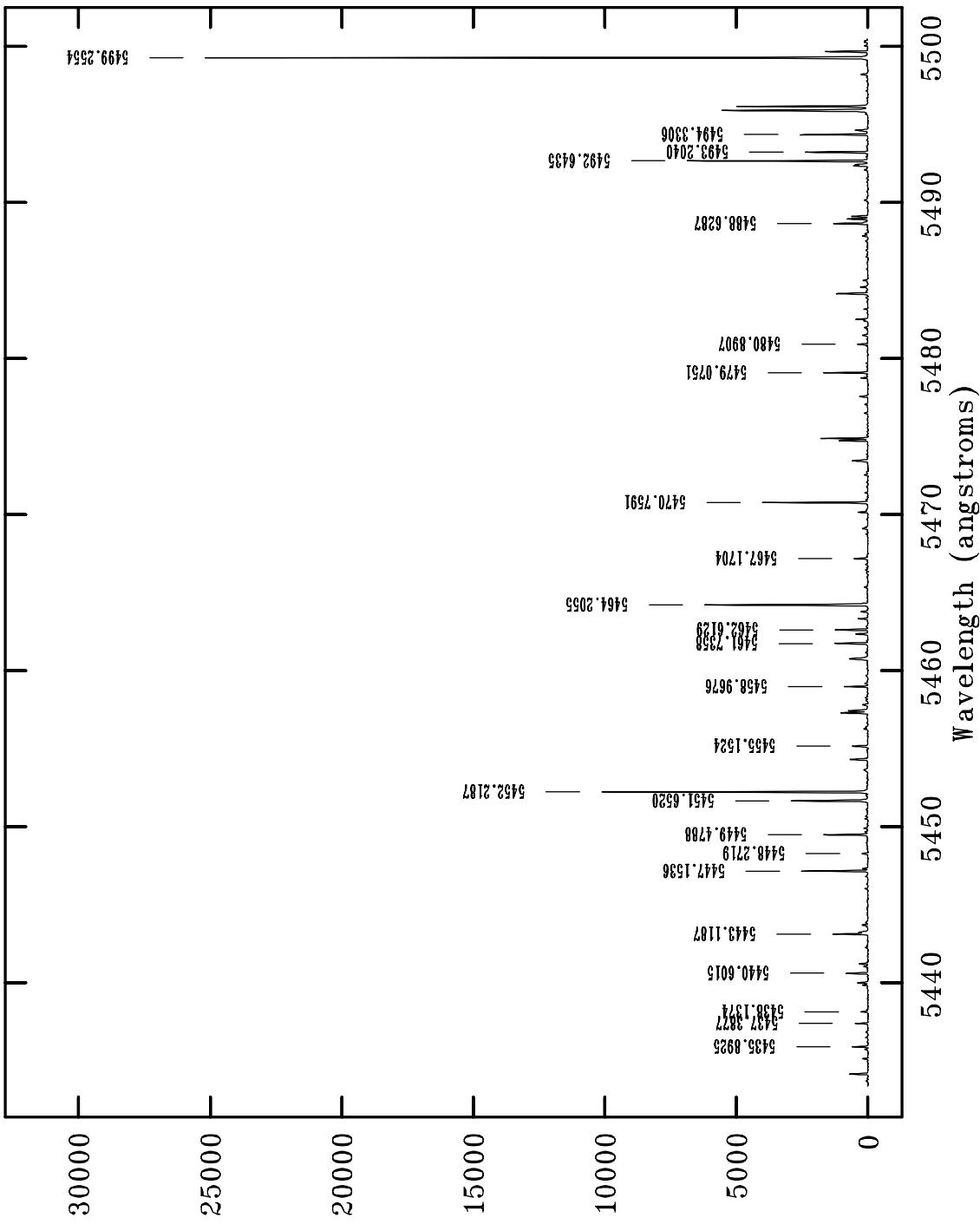
Echelle Order = 110

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 23:32:20 13-Sep-2000
Aperture 15, Image line 15, Order 110 UNKNOWN
identify 077: UNKNOWN



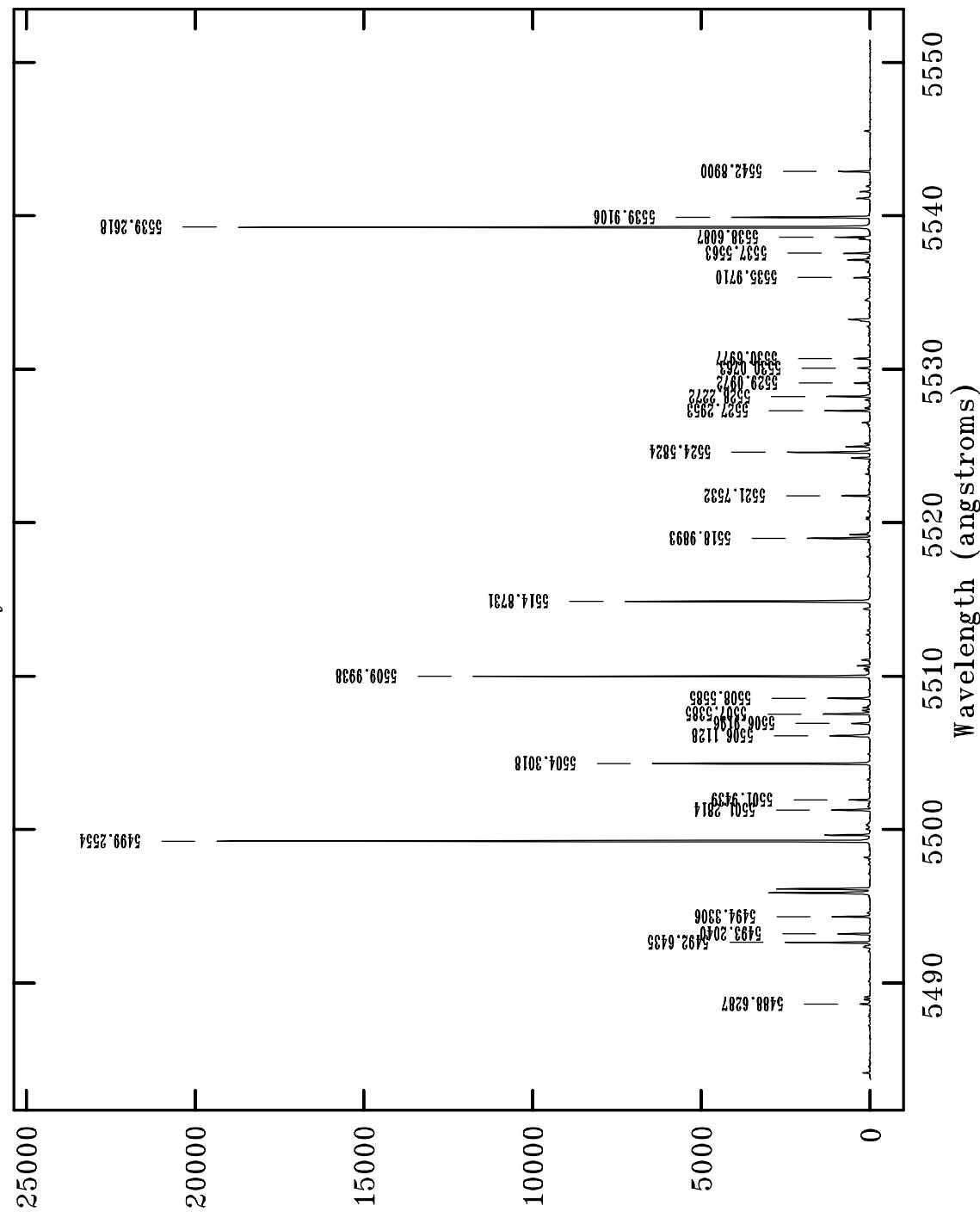
Echelle Order = 109

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 23:29:41 13-Sep-2000
Aperture 14, Image line 14, Order 109
identify 077: UNKNOWN



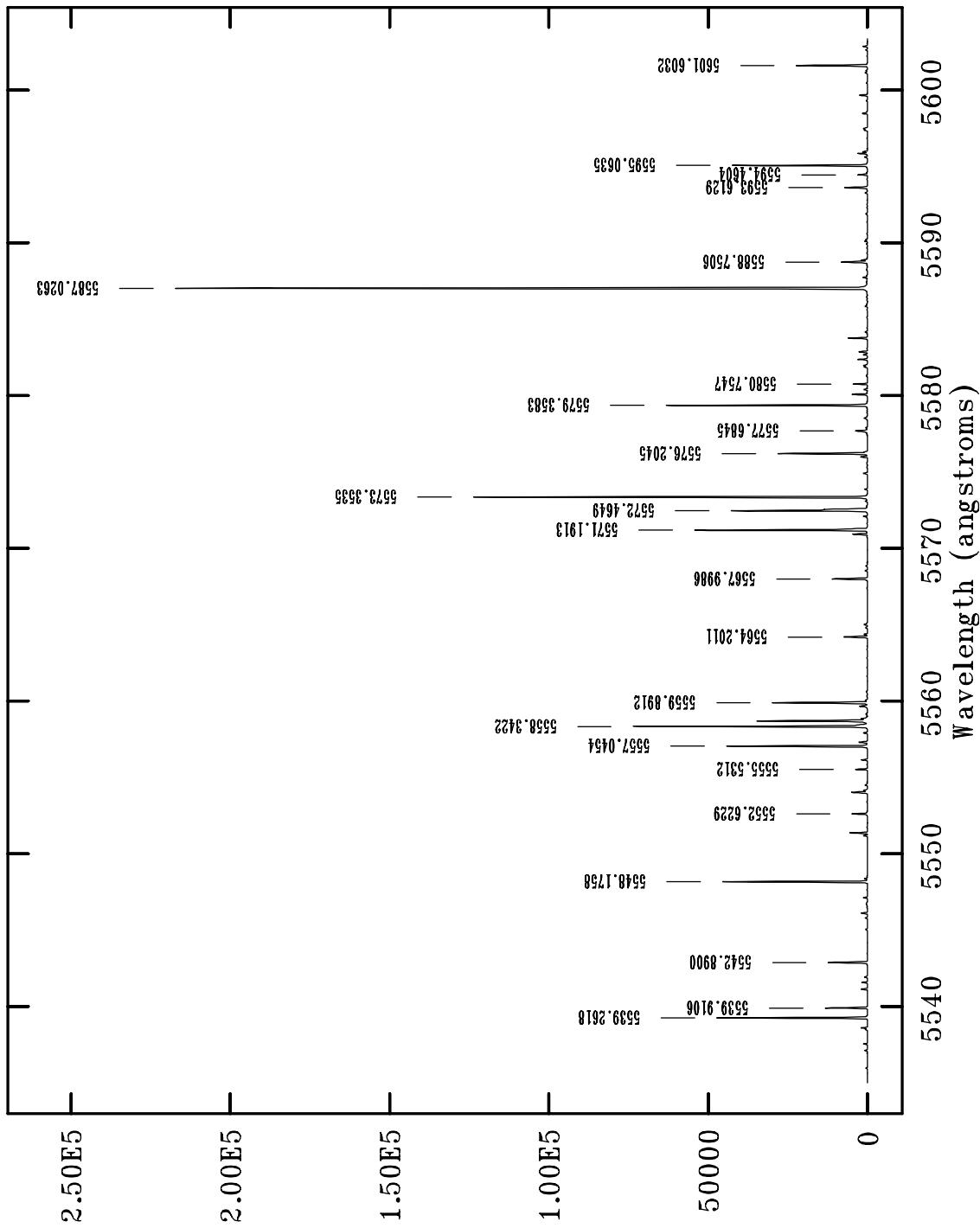
Echelle Order = 108

NOAO/IRAF V2.11.3EXPORT honda@hds Wed 23:26:01 13-Sep-2000
Aperture 13, Image line 13, Order 108
identify 077: UNKNOWN



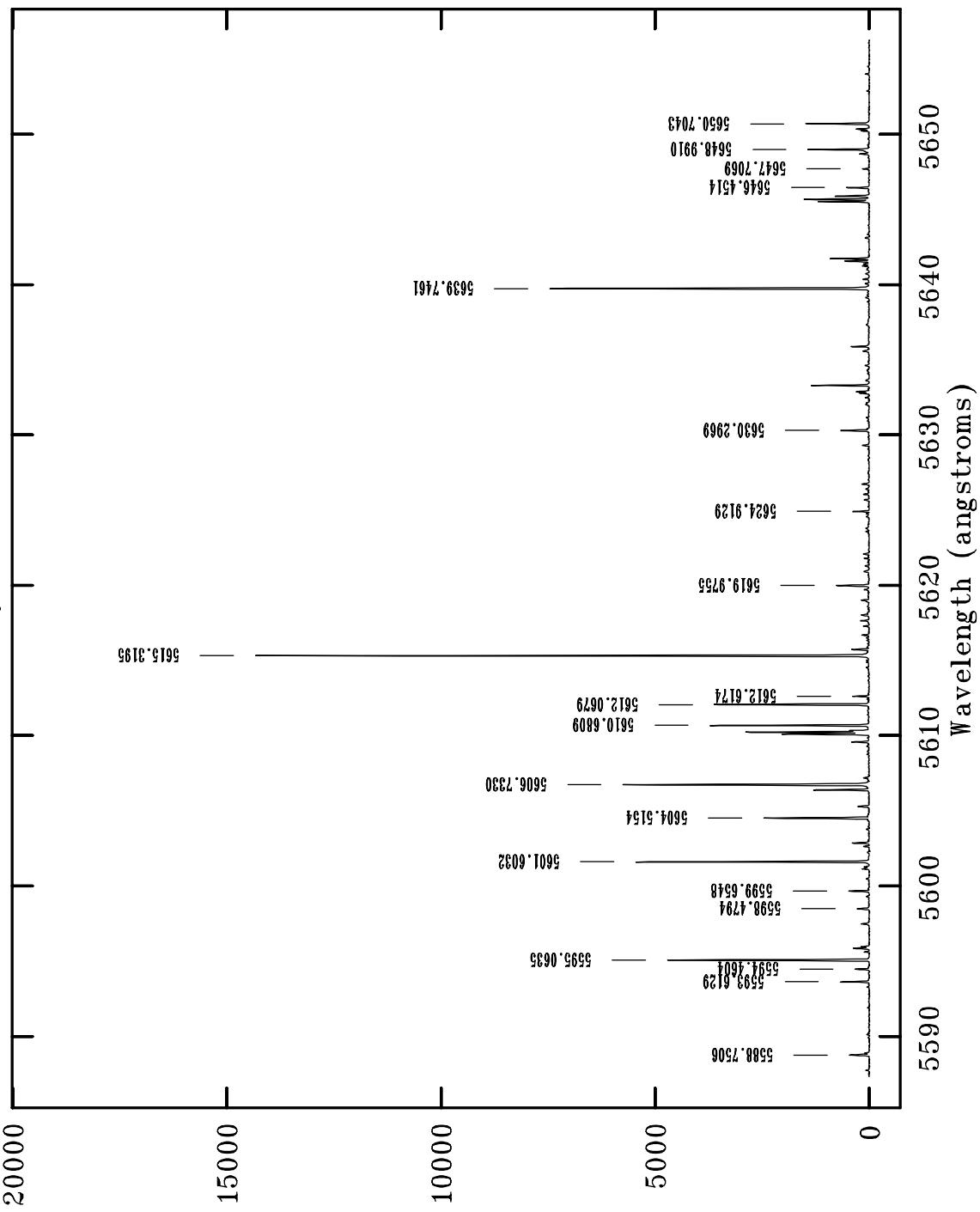
Echelle Order = 107

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 21:46:55 30-Nov-2000
Aperture 12, Image line 12, Order 107
identify 077: UNKNOWN



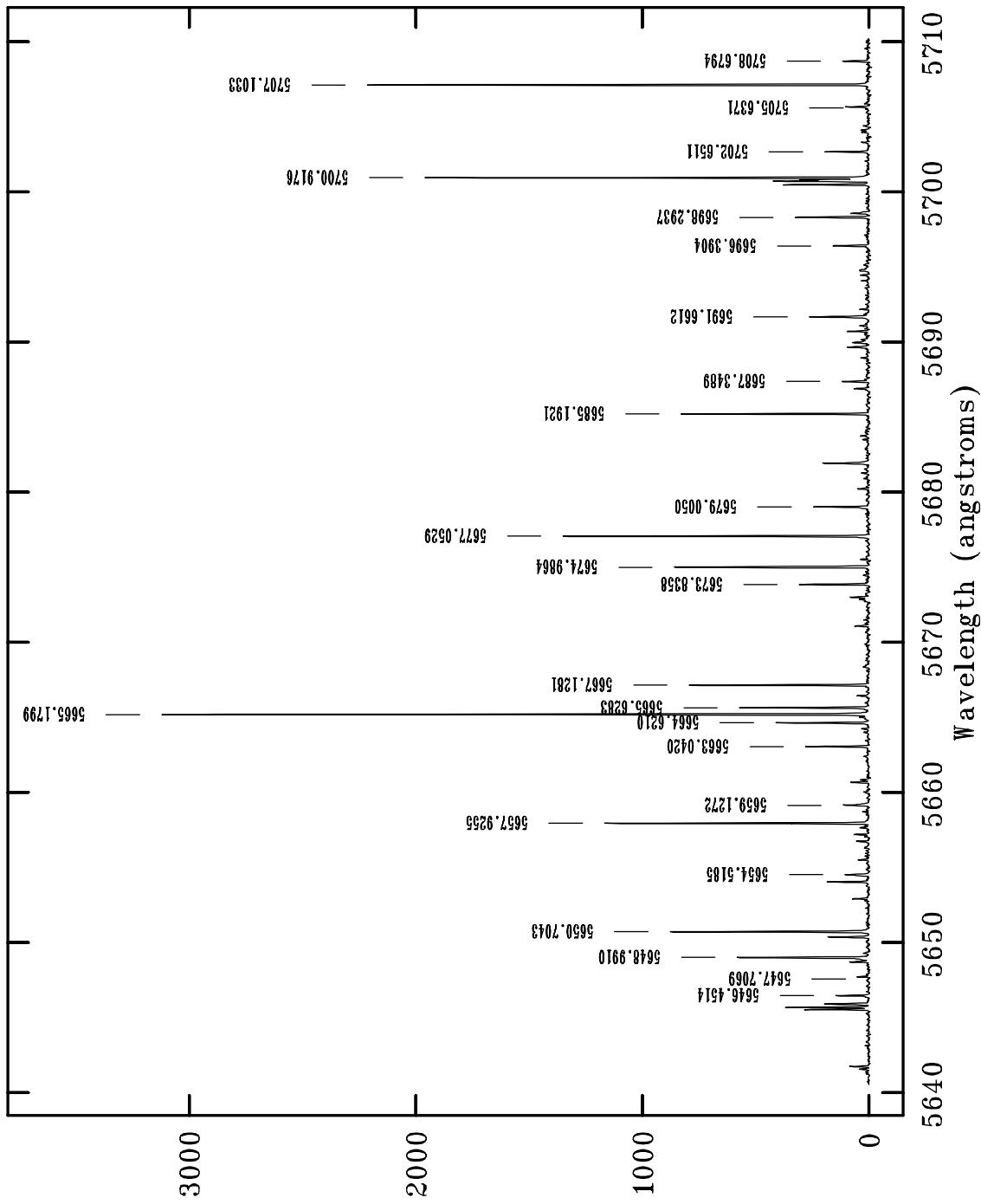
Echelle Order = 106

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 23:20:19 13-Sep-2000
Aperture 11, Image line 11 Order 106
identify 077: UNKNOWN



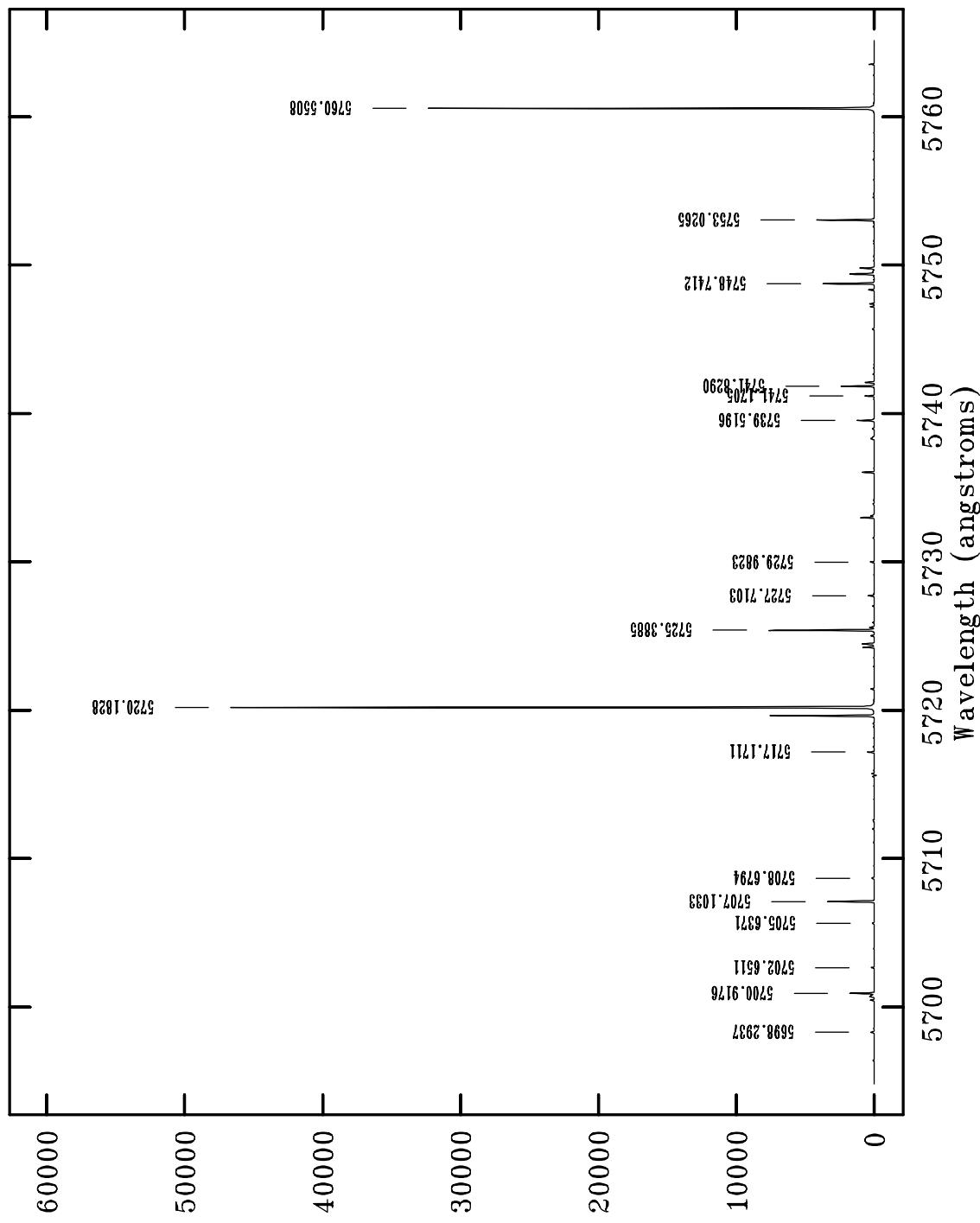
Echelle Order = 105

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 23:15:27 13-Sep-2000
Aperture 10, Image line 10, Order 105
identify 077: UNKNOWN



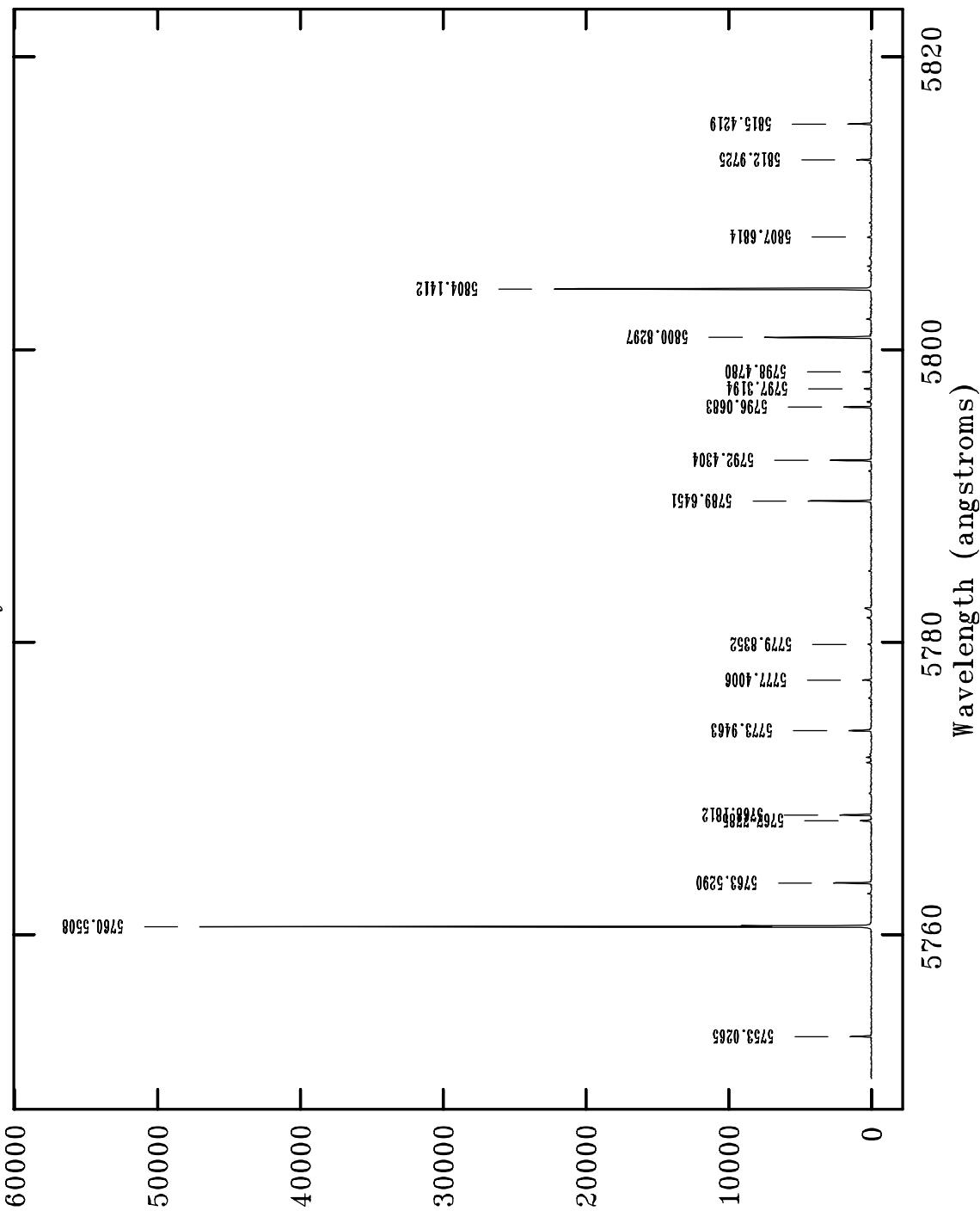
Echelle Order = 104

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 23:13:20 13-Sep-2000
Aperture 9, Image line 9, Order 104
identify 077: UNKNOWN



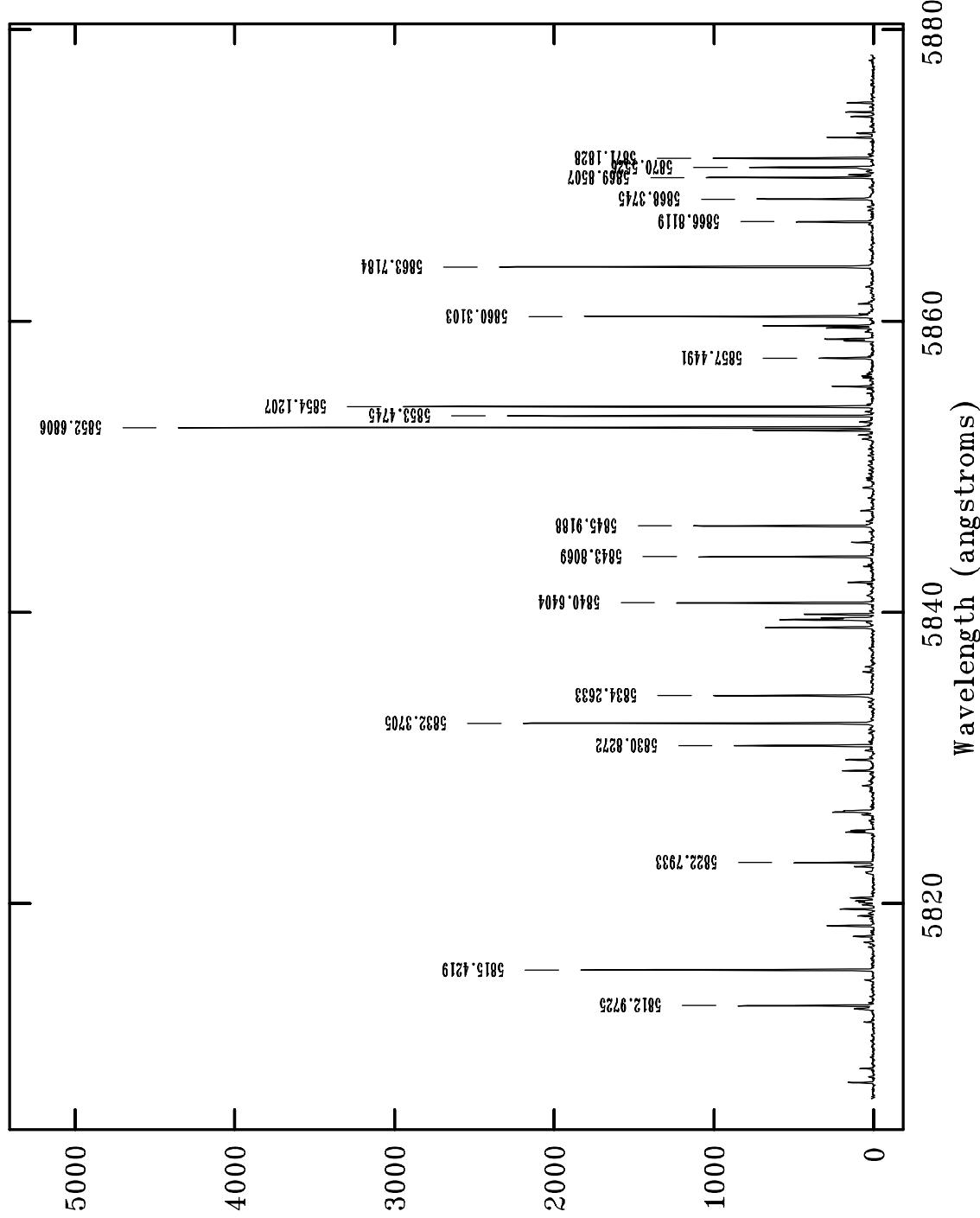
Echelle Order = 103

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 23:10:48 13-Sep-2000
Aperture 8, Image line 8, Order 103
identify 077: UNKNOWN



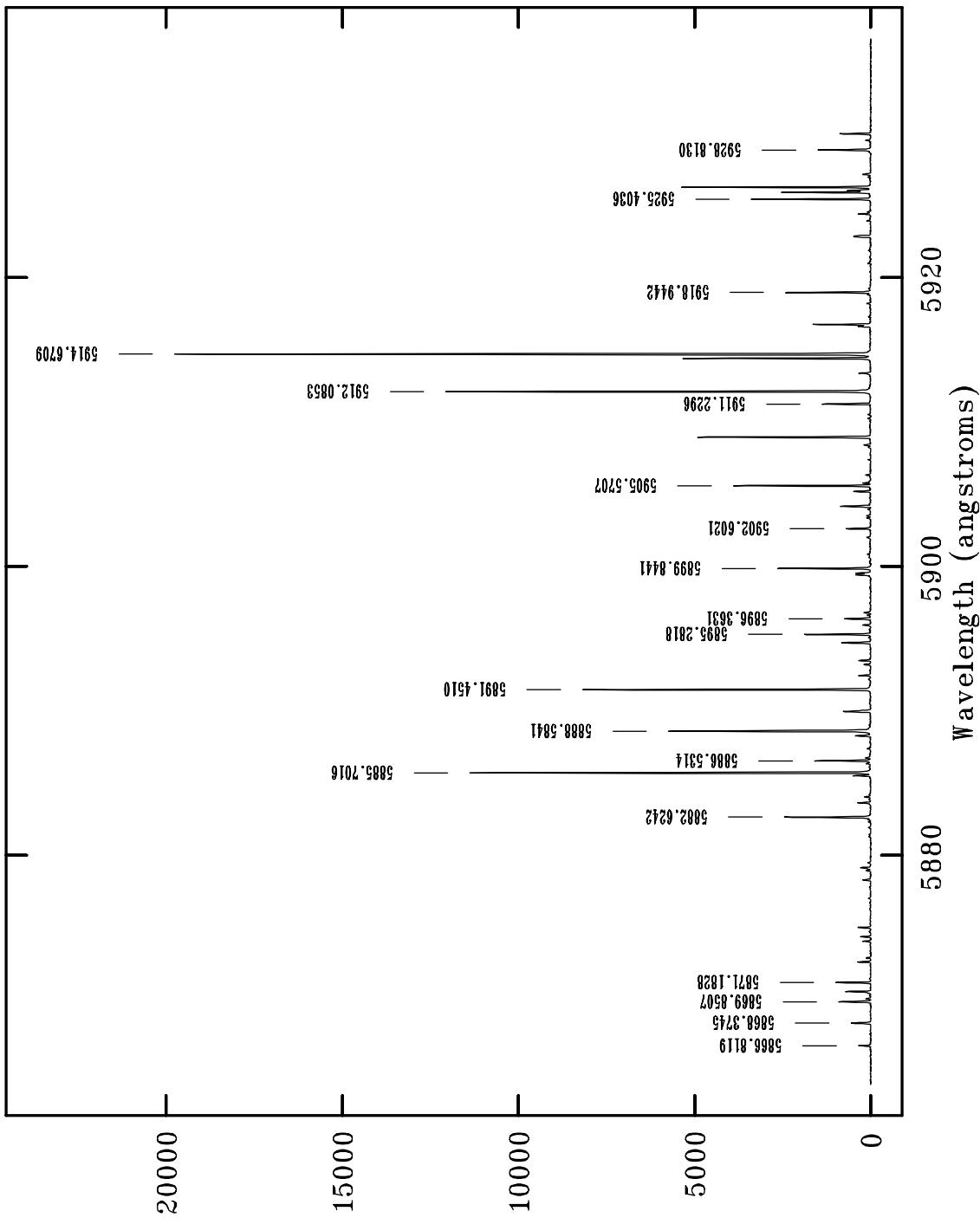
Echelle Order = 102

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 23:08:43 13-Sep-2000
Aperture 7, Image line 7 Order 102
identify 077: UNKNOWN



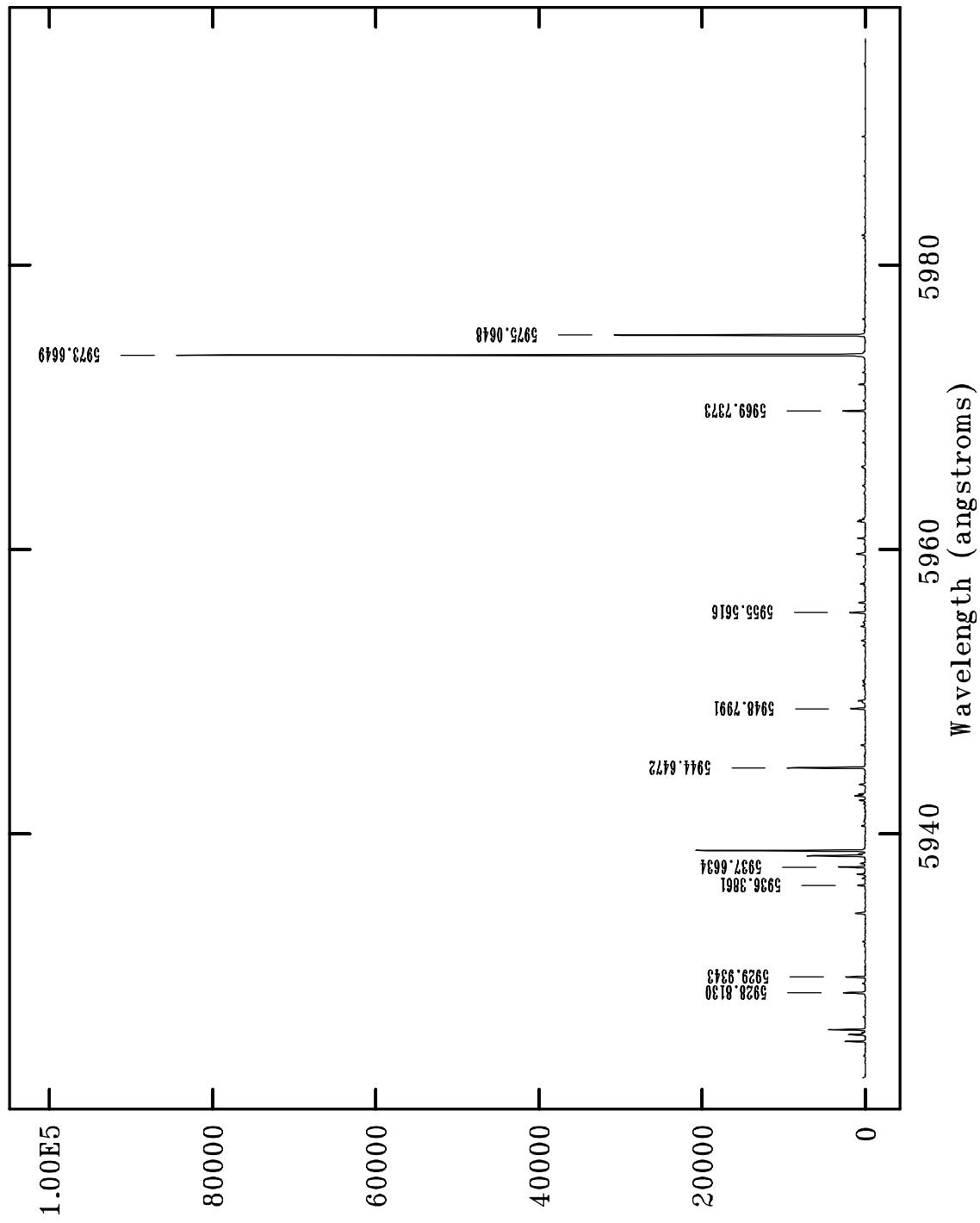
Echelle Order = 101

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 23:06:20 13-Sep-2000
Aperture 6, Image line 6, Order 101
identify 077: UNKNOWN



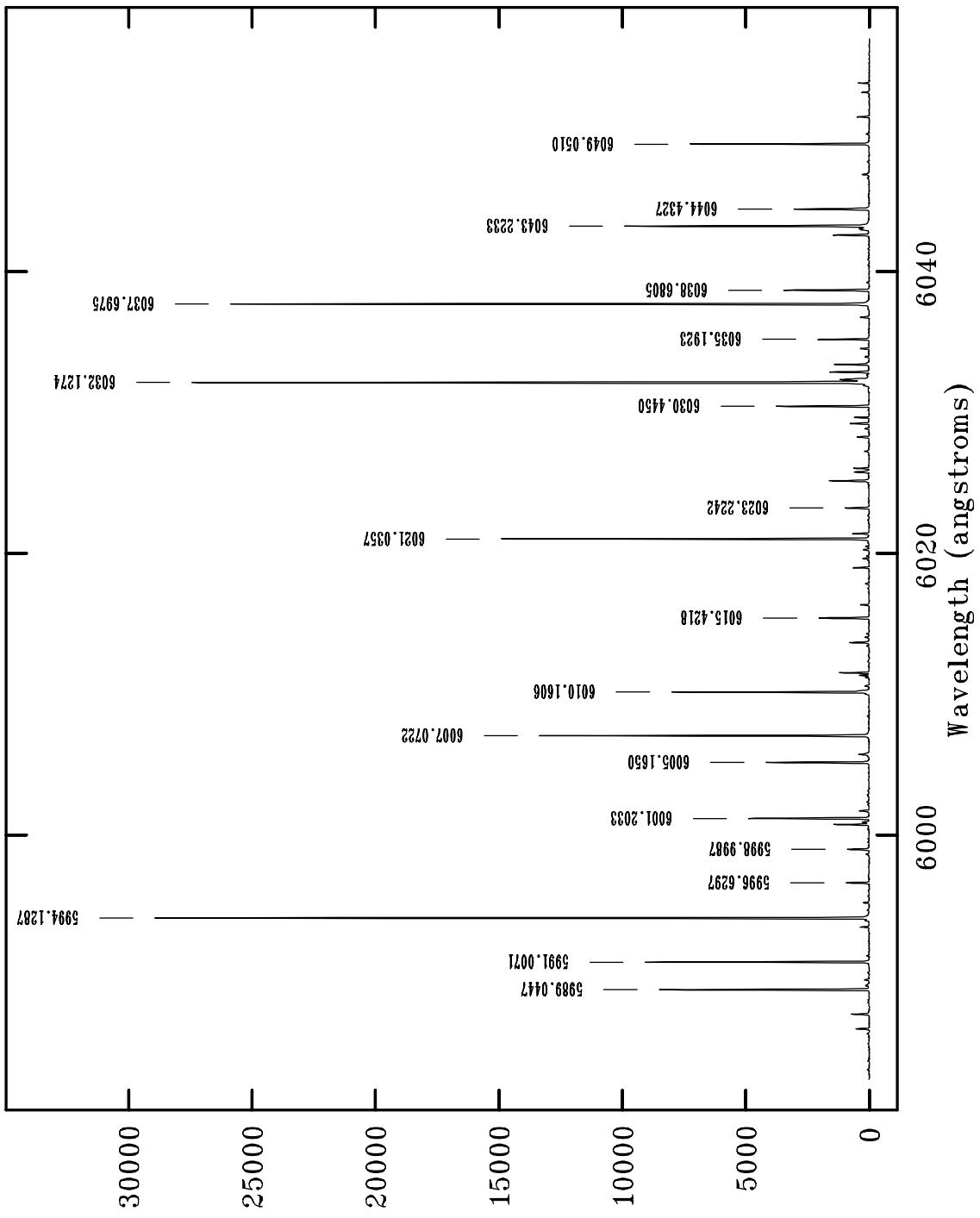
Echelle Order = 100

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 21:45:44 30-Nov-2000
Aperture 5, Image line 5, Order 100
ecidentity 077: UNKNOWN



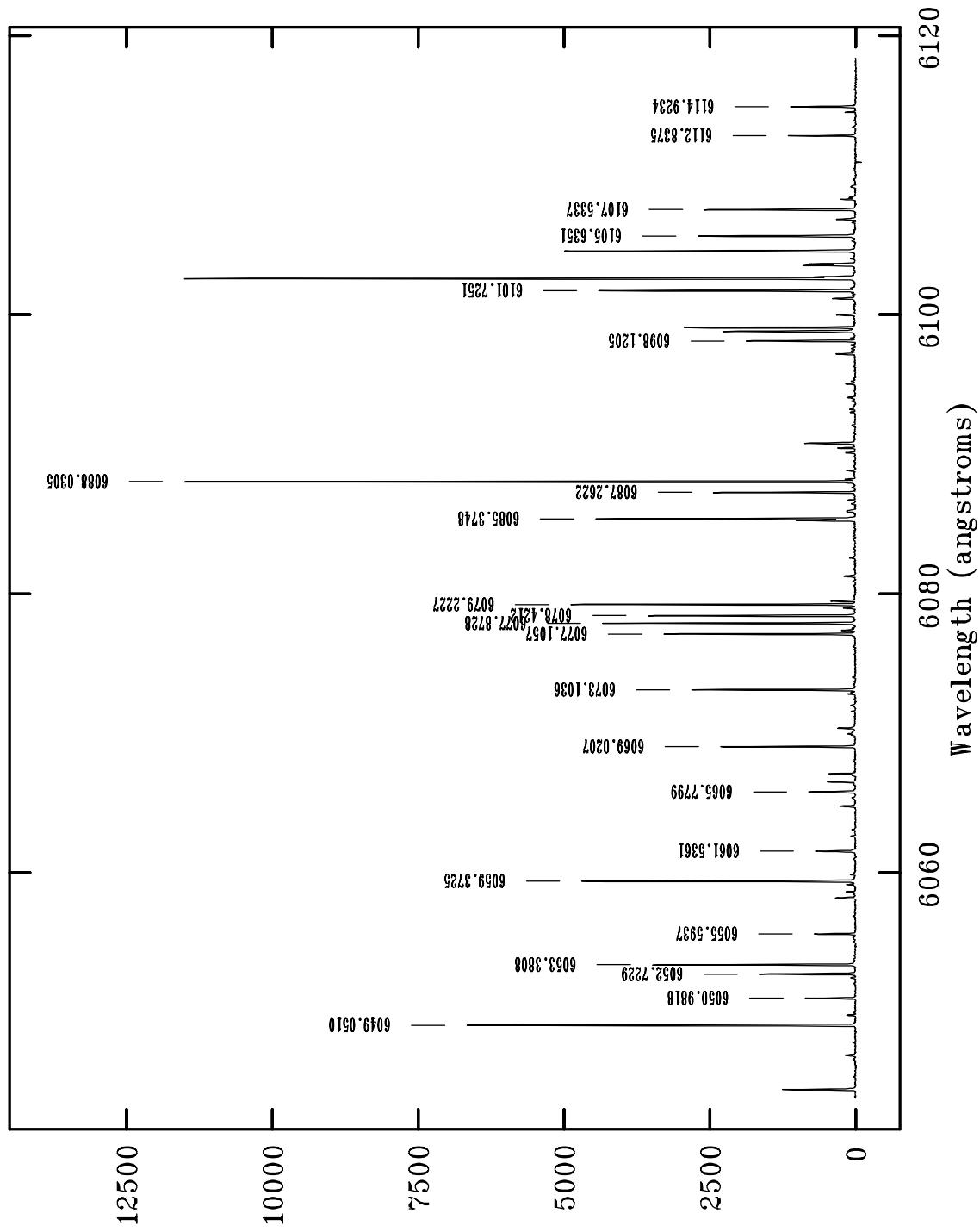
Echelle Order = 99

NOAO/IRAF V2.11.3EXPORT honda@hds Wed 22:56:55 13-Sep-2000
Aperture 4, Image line 4, Order 99
identify 077: UNKNOWN



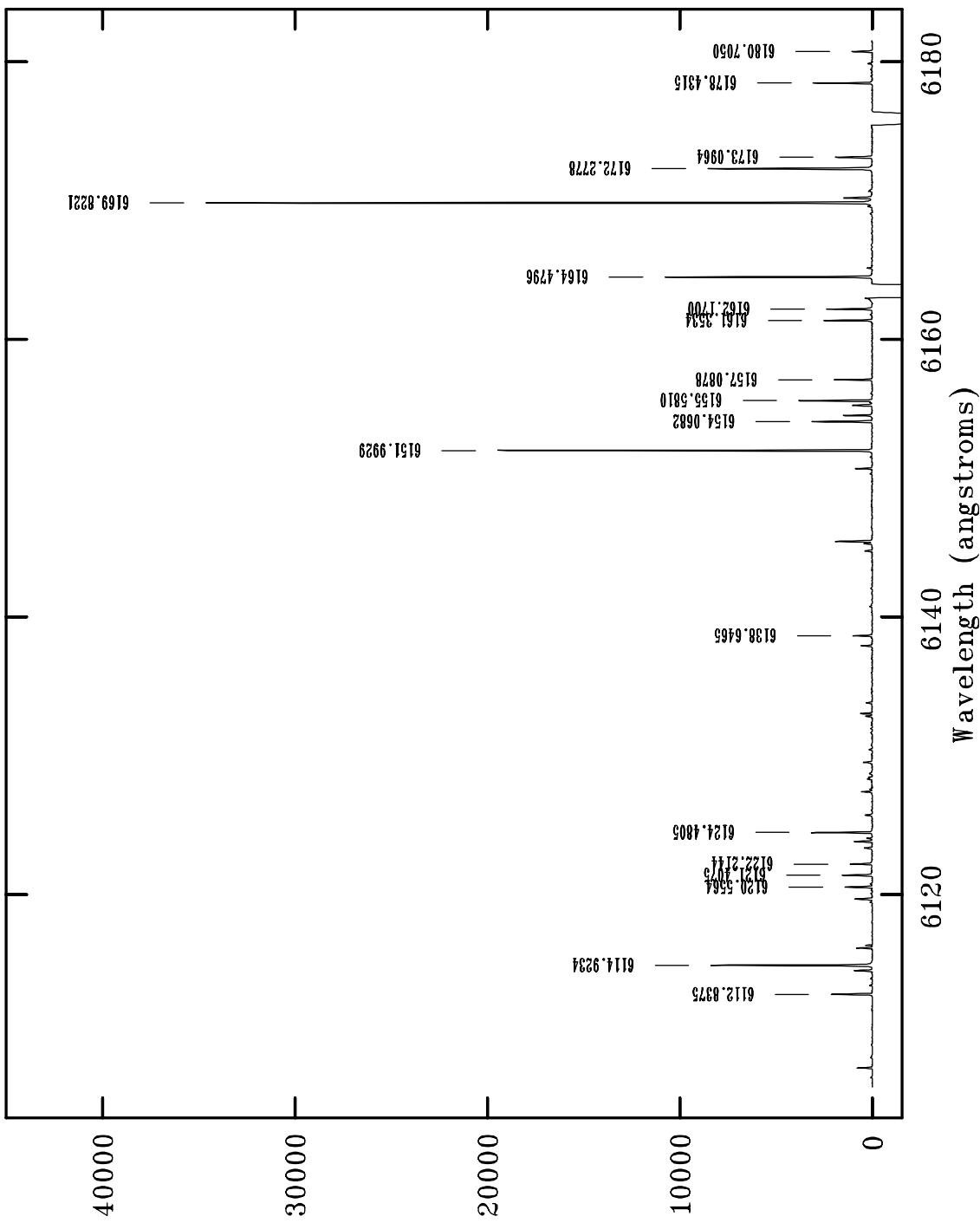
Echelle Order = 98

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 22:54:50 13-Sep-2000
Aperture 3, Image 3, Order 98 UNKNOWN
ecidentify 077: UNKNOWN



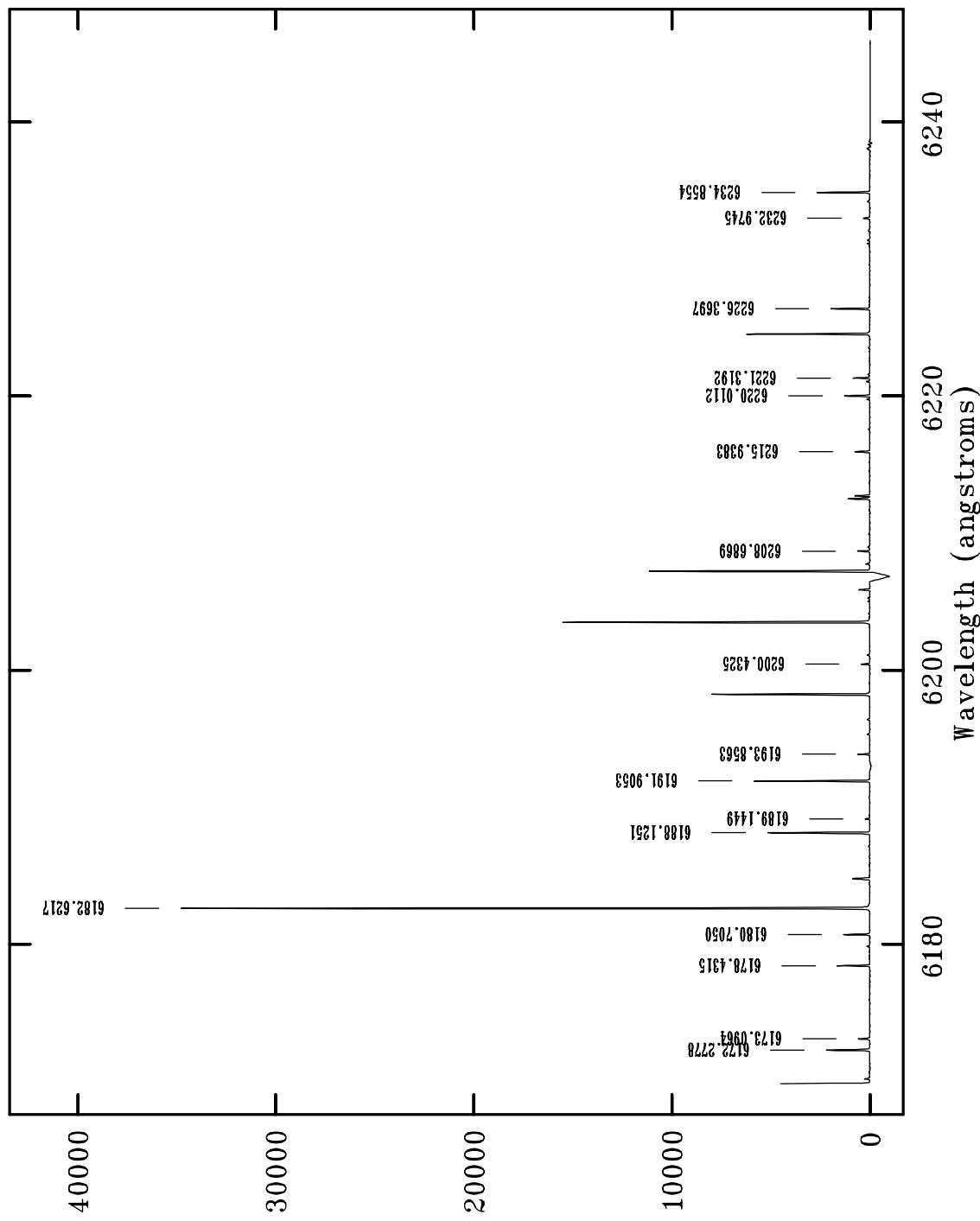
Echelle Order = 97

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 22:49:19 13-Sep-2000
Aperture 2, Image line 2, Order 97
identify 077: UNKNOWN



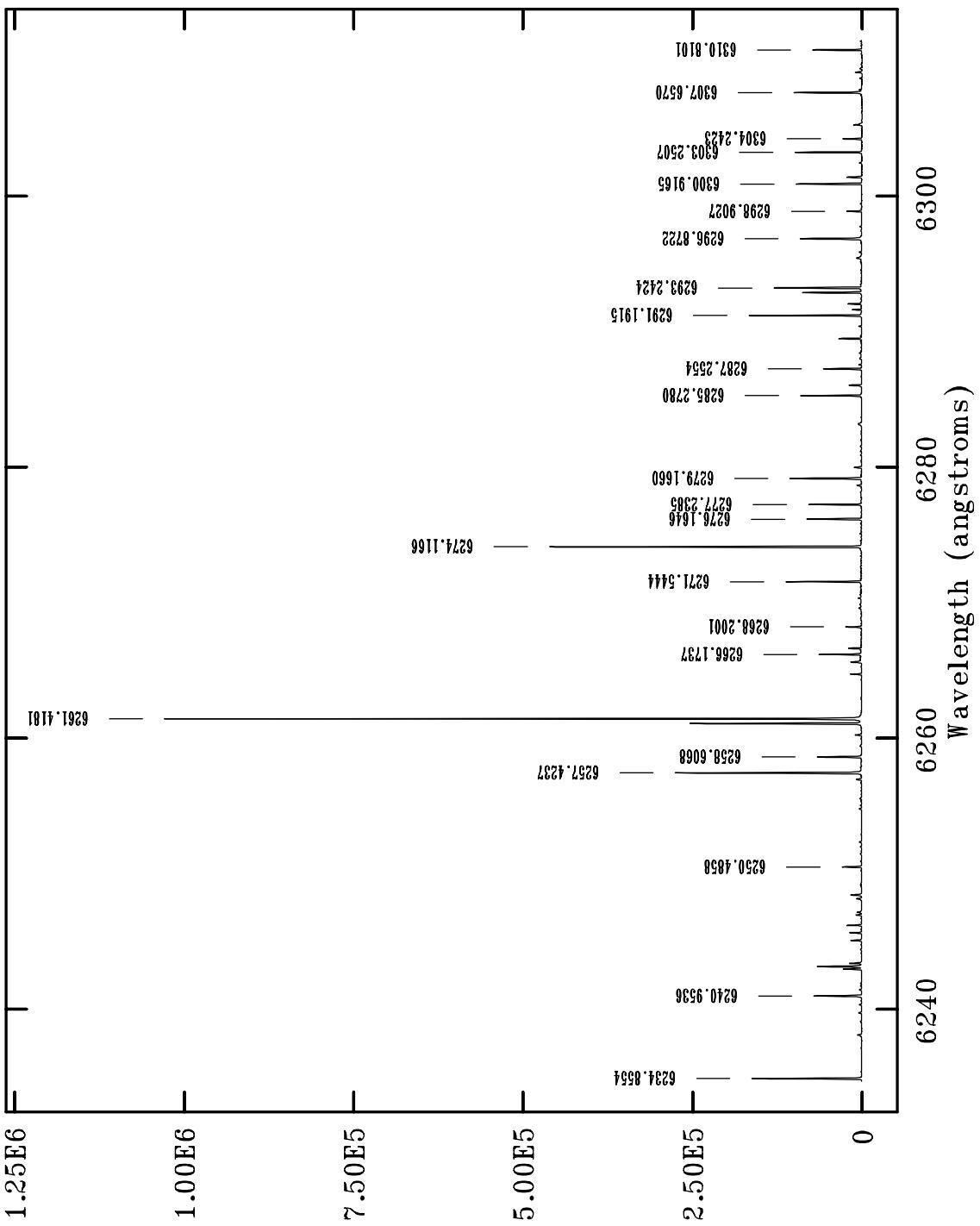
Echelle Order = 96

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 21:42:02 30-Nov-2000
Aperture 1, Image line 1, Order 96
Identify 077: UNKNOWN



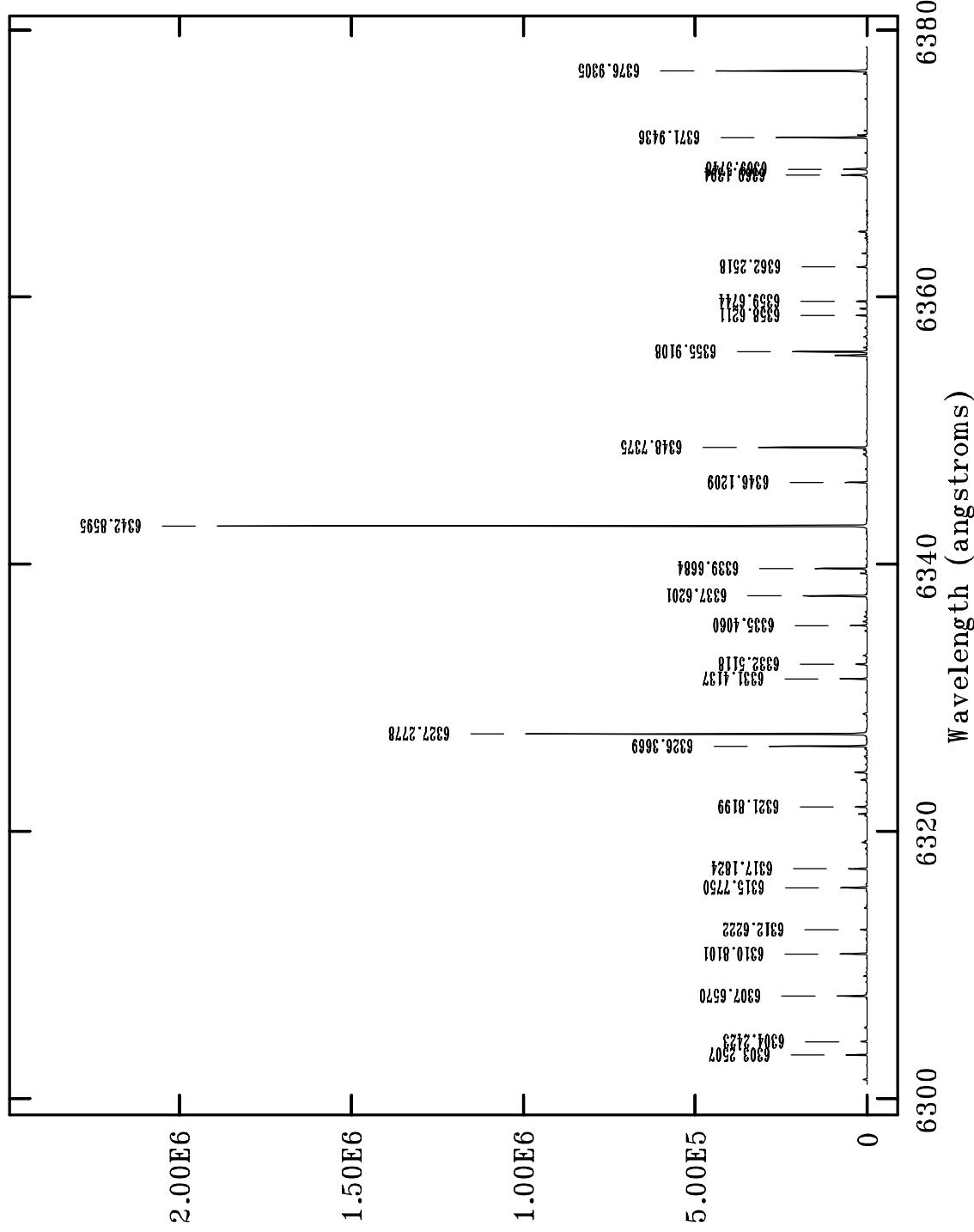
Echelle Order = 95

NOAO / IRAF V2.11.3EXPORT honda@hds Sun 18:07:53 17-Dec-2000
Aperture 3 Image line 3, Order 97
ecidentify COMPARISSON_B_F_02.ec: COMPARISSON



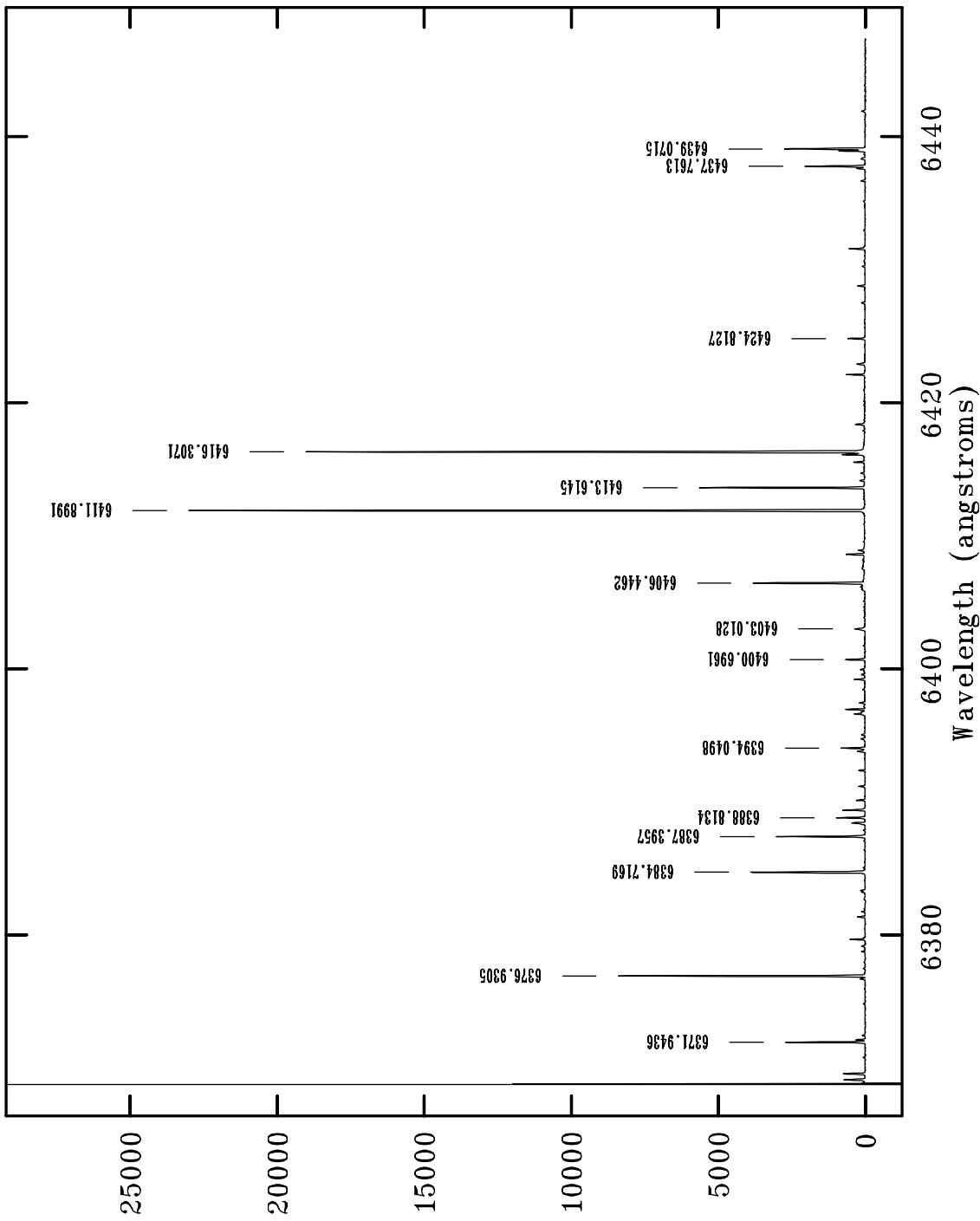
Echelle Order = 94

NOAO / IRAF V2.11.3EXPORT honda@hds Sun 18:03:39 17-Dec-2000
Aperture 2 Image line 2, Order 96
ecidify COMPARISSON_B_F_02.ec: COMPARISON



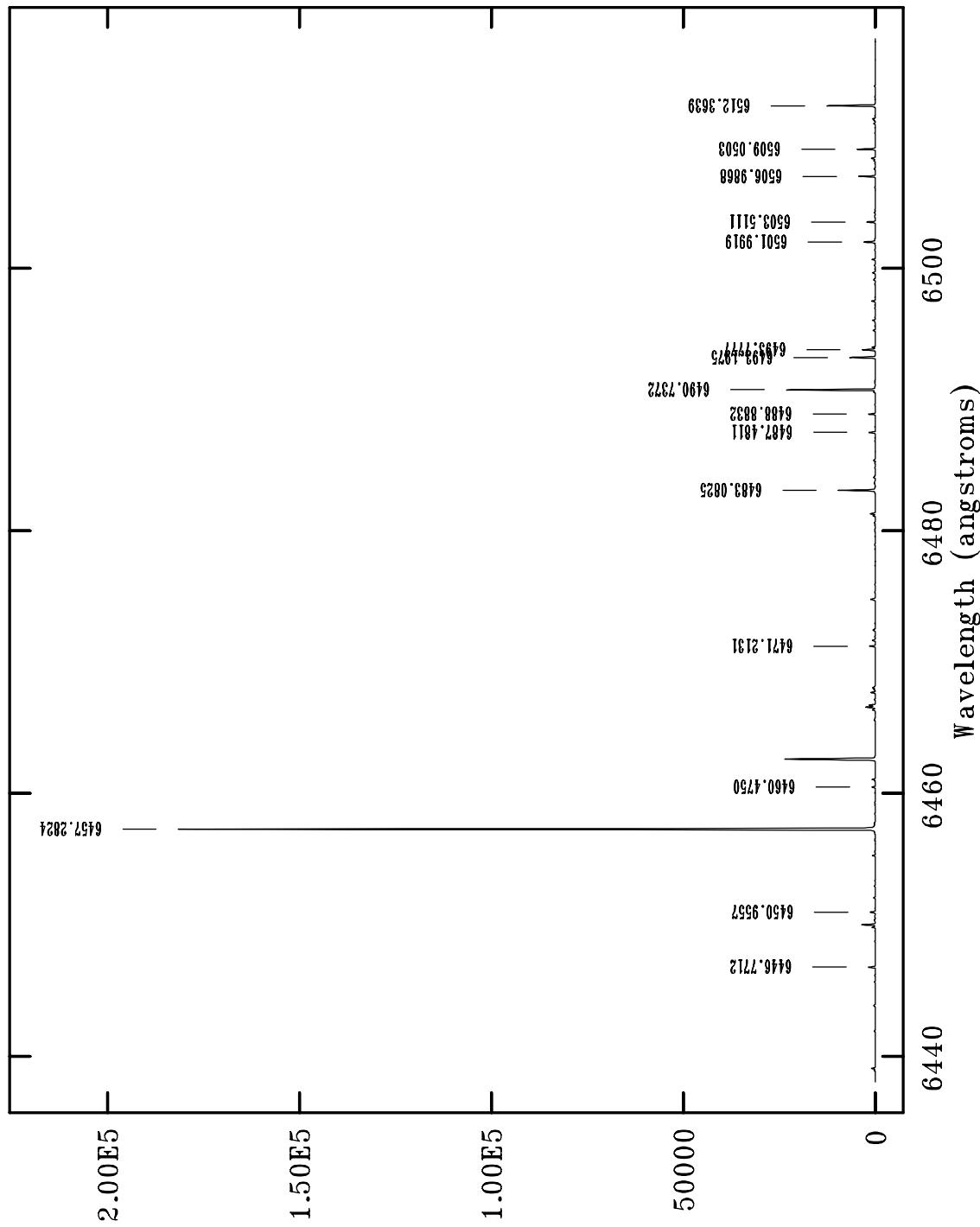
Echelle Order = 93

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 18:37:05 13-Sep-2000
Aperture 16, Image line 16, Order 95
identify 076: UNKNOWN



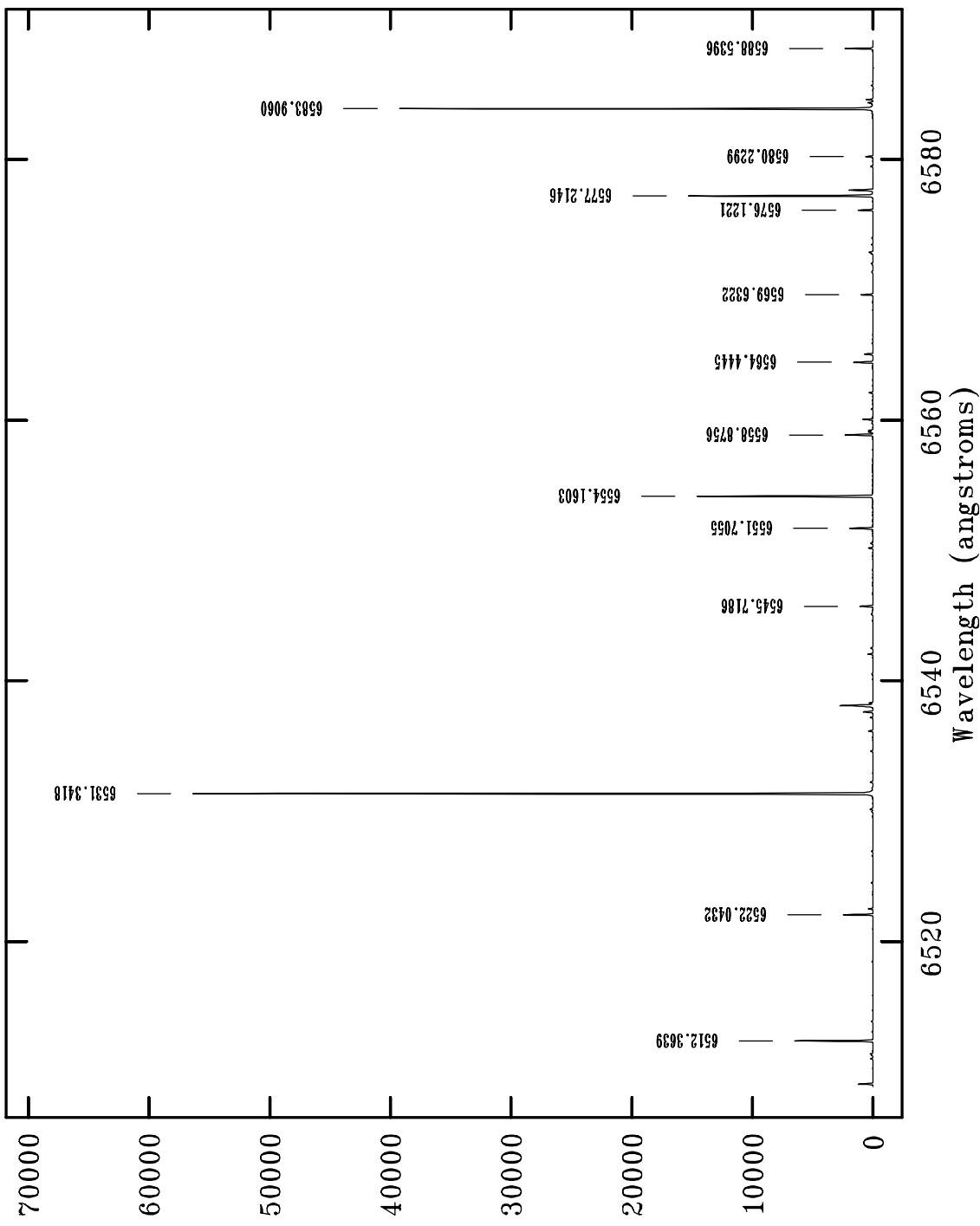
Echelle Order = 92

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 18:33:39 13-Sep-2000
Aperture 15, Image line 15, Order 94
ecidentify 076: UNKNOWN



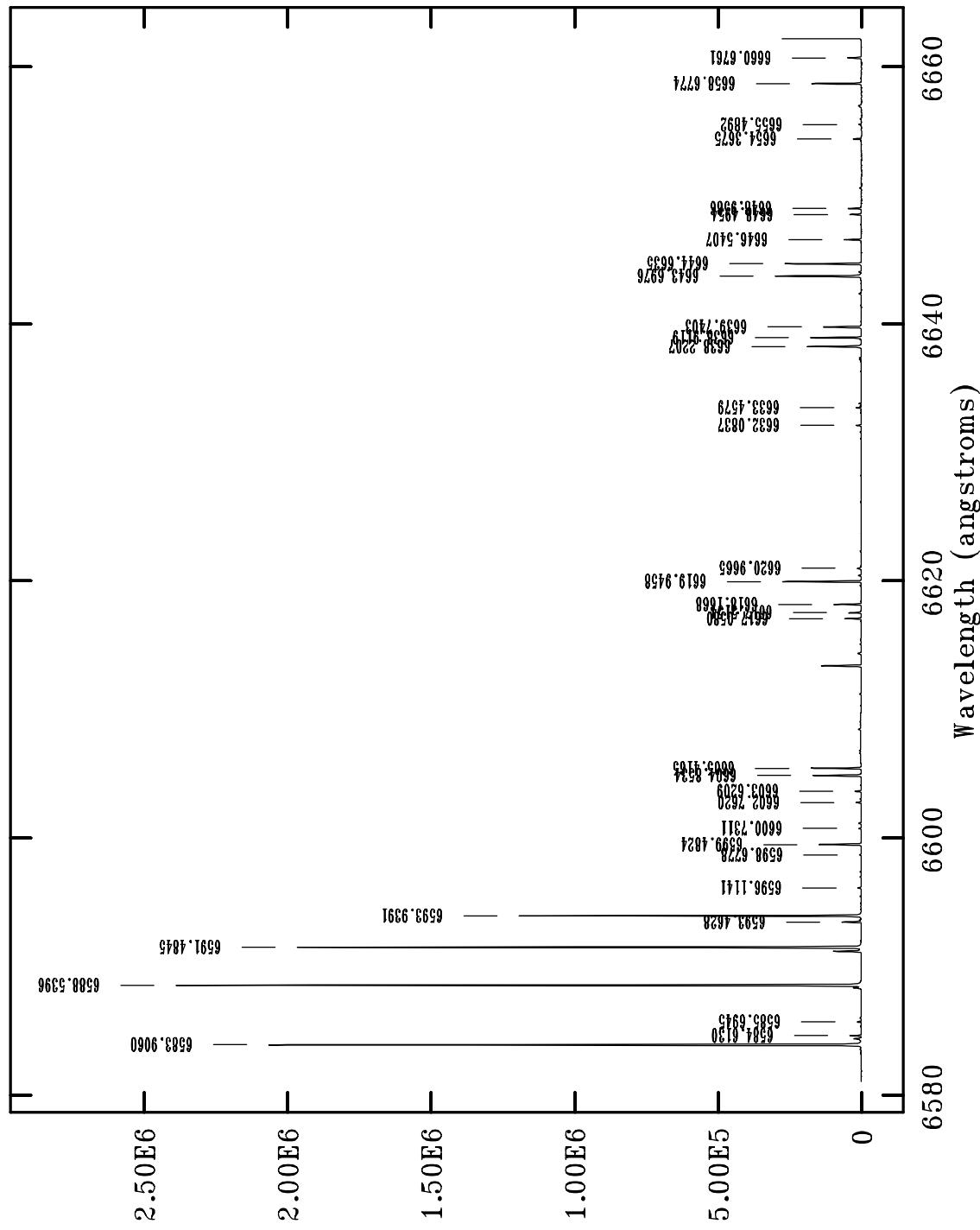
Echelle Order = 91

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 18:29:54 13-Sep-2000
Aperture 14, Image line 14, Order 91
identify 076: UNKNOWN



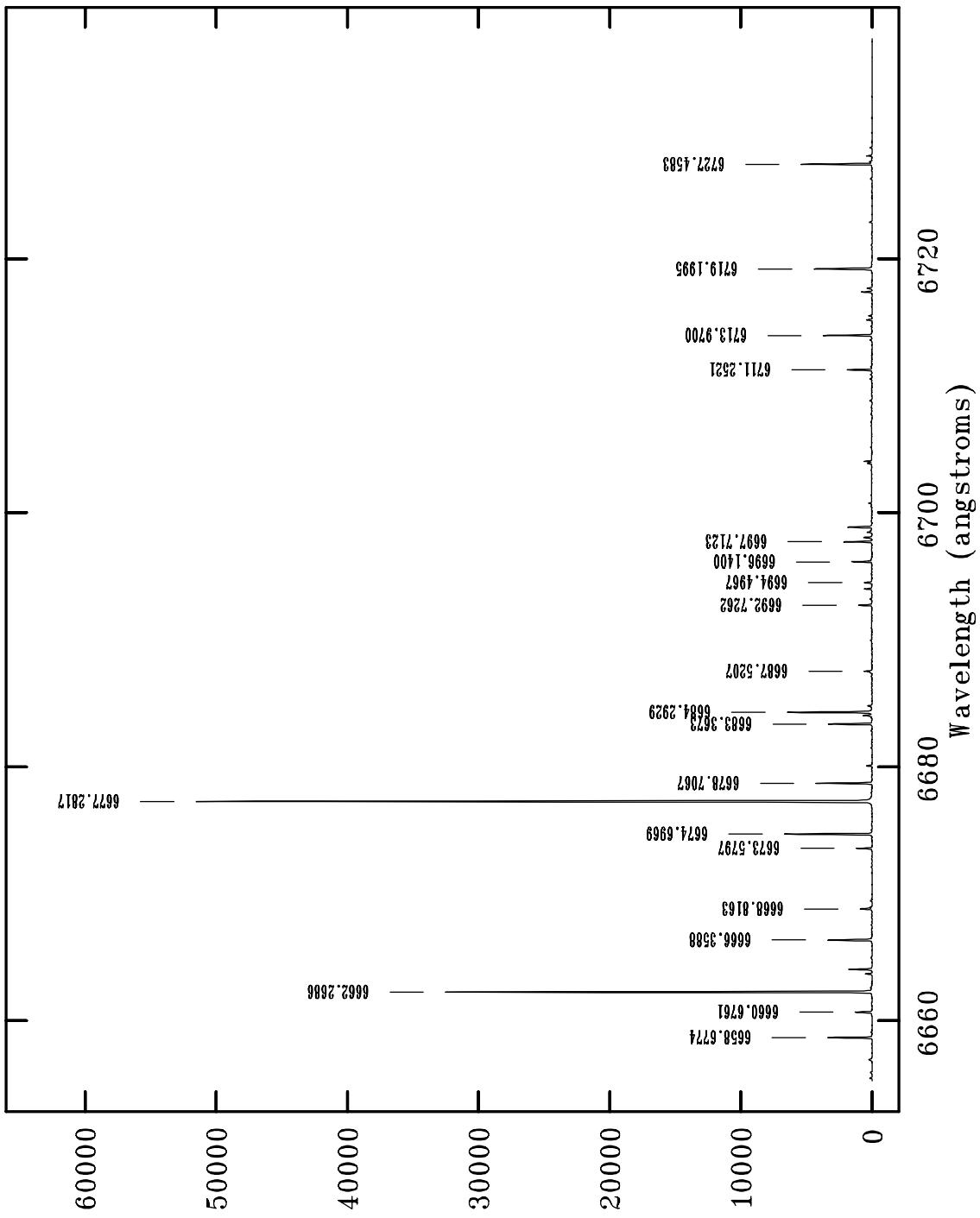
Echelle Order = 90

NOAO/IRAF V2.11.3EXPORT honda@hds Tue 17:54:54 03-Apr-2001
Aperture 15 Image line 15 Order 90
identify 076a: COMPARISSON



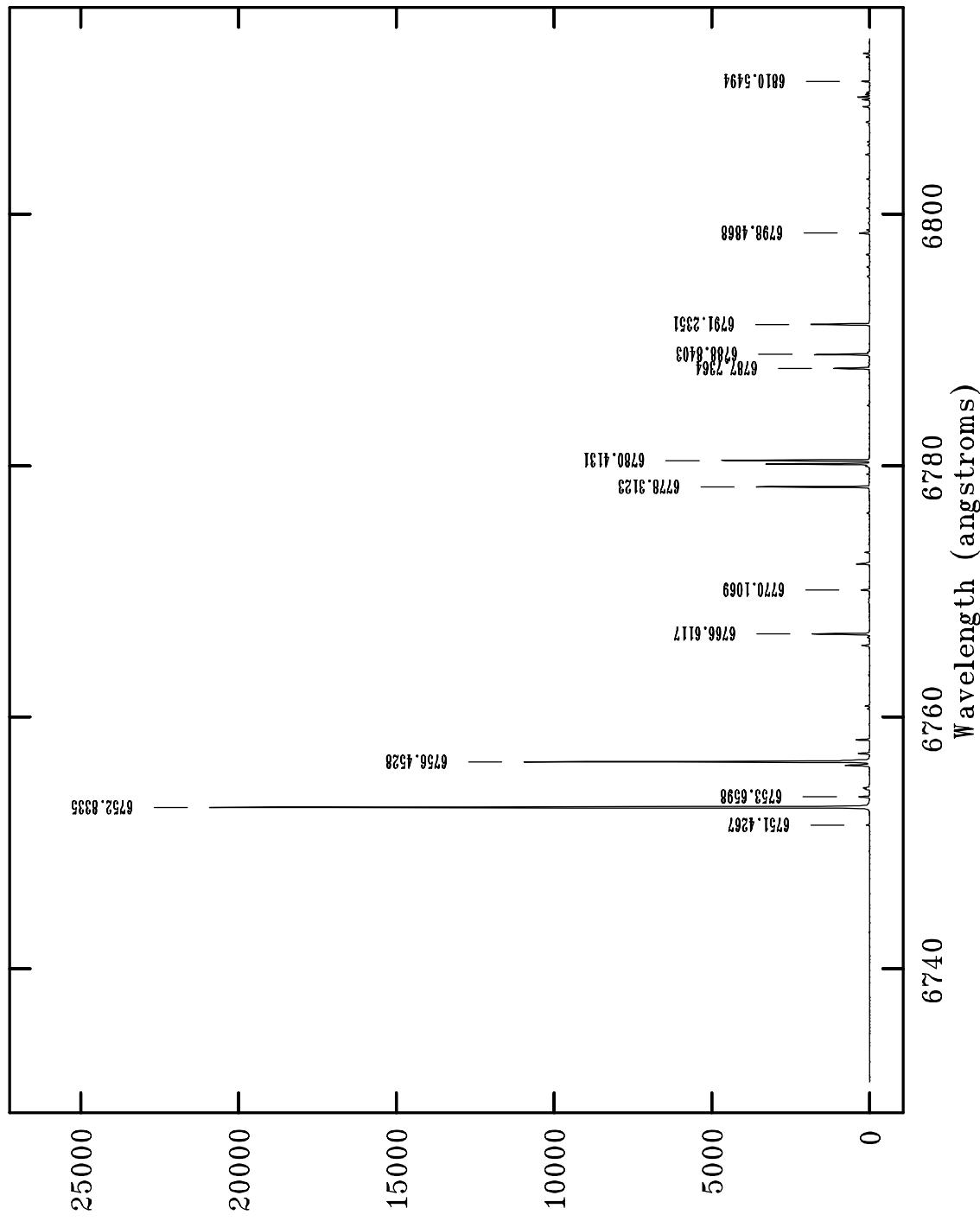
Echelle Order = 89

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 18:24:28 13-Sep-2000
Aperture 12, Image line 12, Order 89
identify 076: UNKNOWN



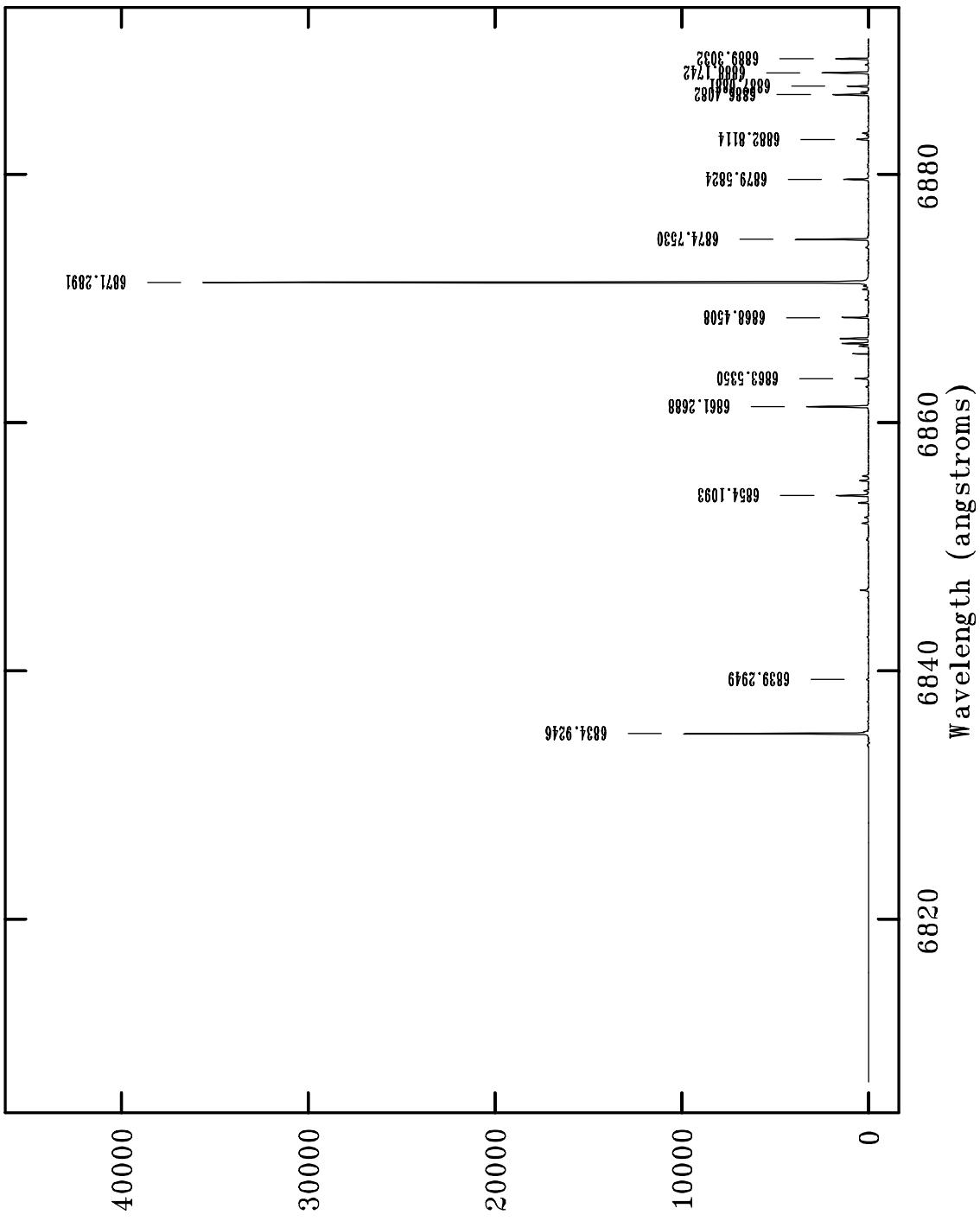
Echelle Order = 88

NOAO/IRAF V2.11.3EXPORT honda@hds Wed 18:19:48 13-Sep-2000
Aperture 11, Image line 11 Order 88
ecidentify 076: UNKNOWN



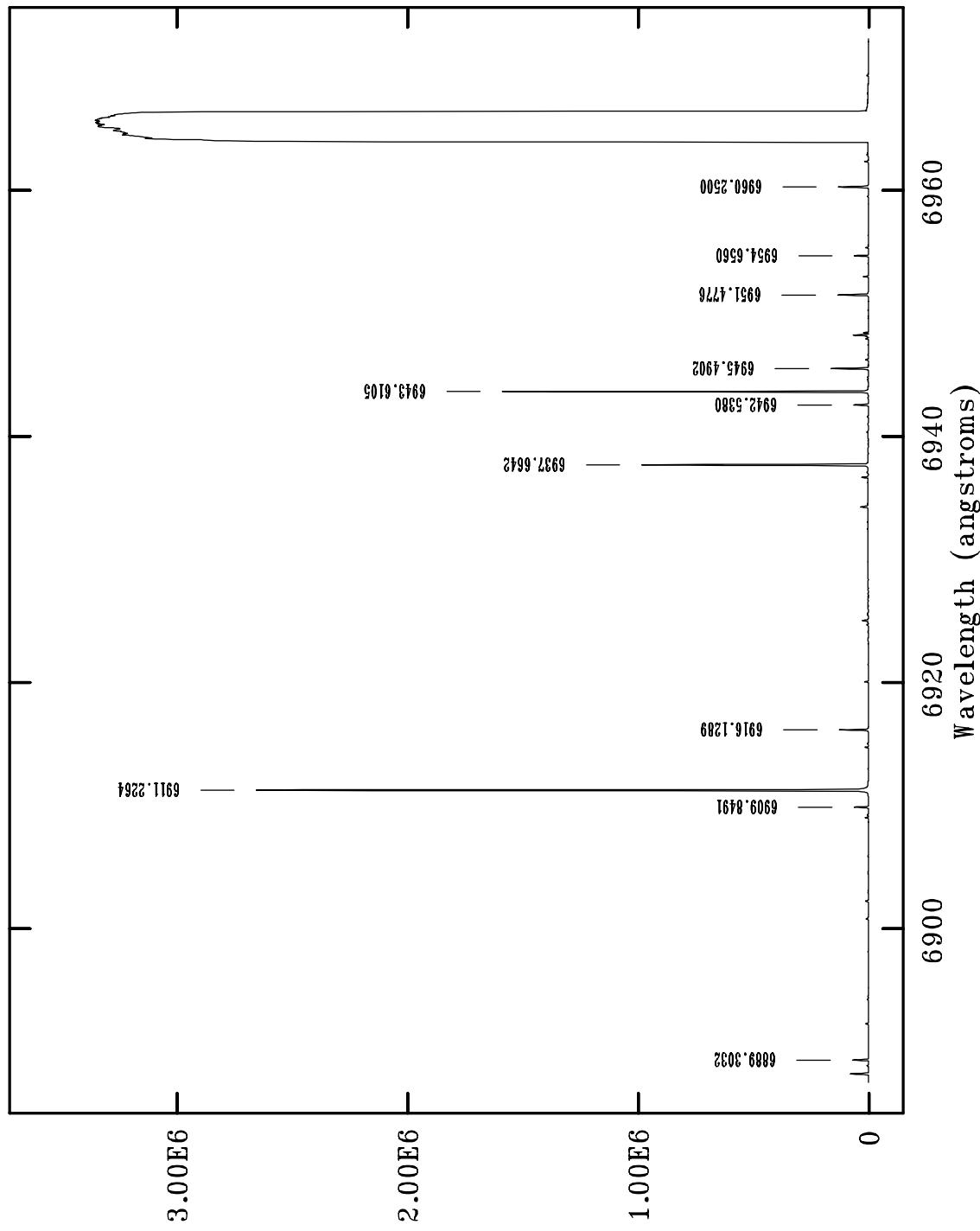
Echelle Order = 87

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 18:05:59 13-Sep-2000
Aperture 15, Image line 15, Order 87
identify 063: UNKNOWN



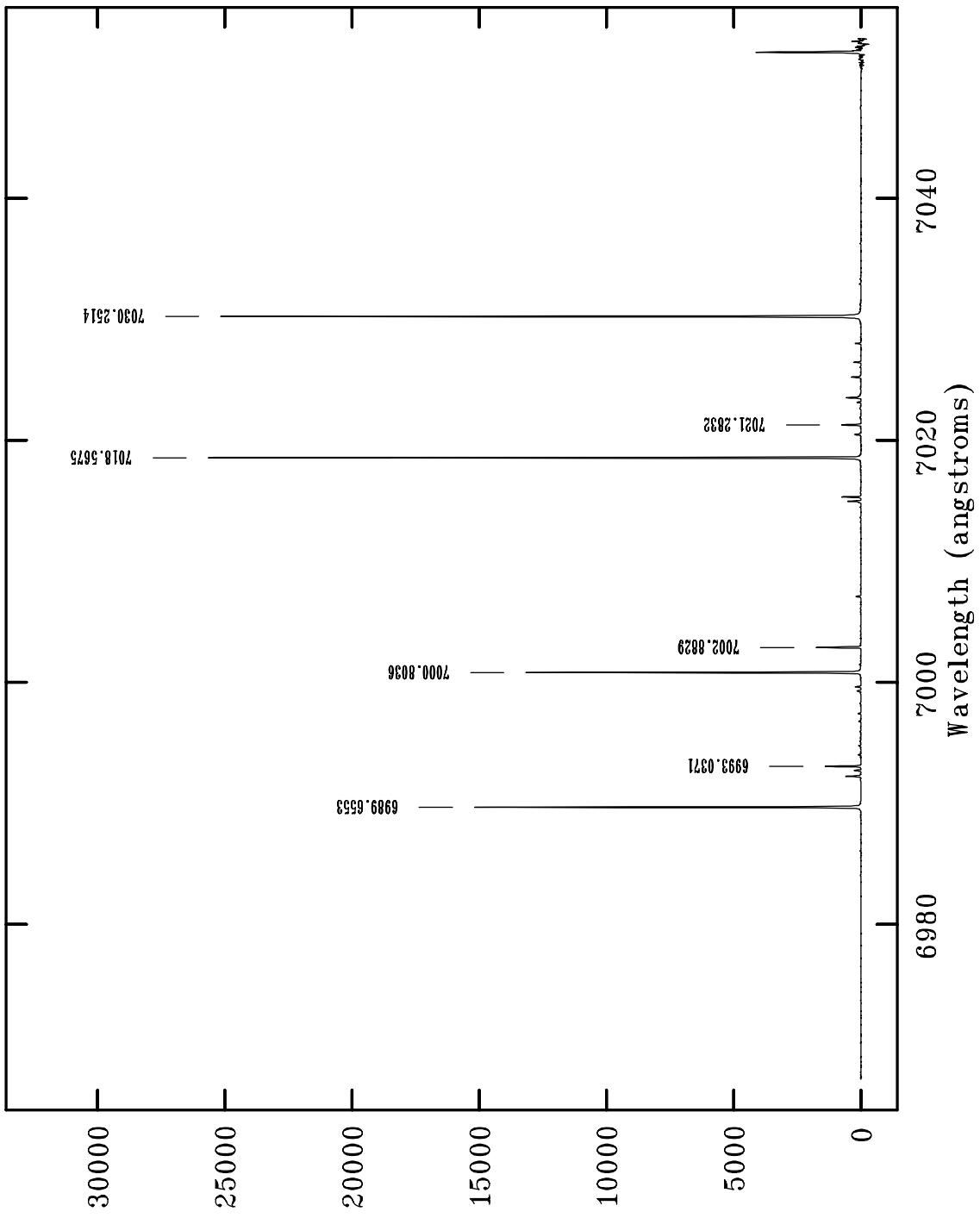
Echelle Order = 86

NOAO / IRAF V2.11.3EXPORT honda@hds Fri 19:53:13 19-Jan-2001
Aperture 11, Image line 11, Order 86
identify fof63: COMPARISSON



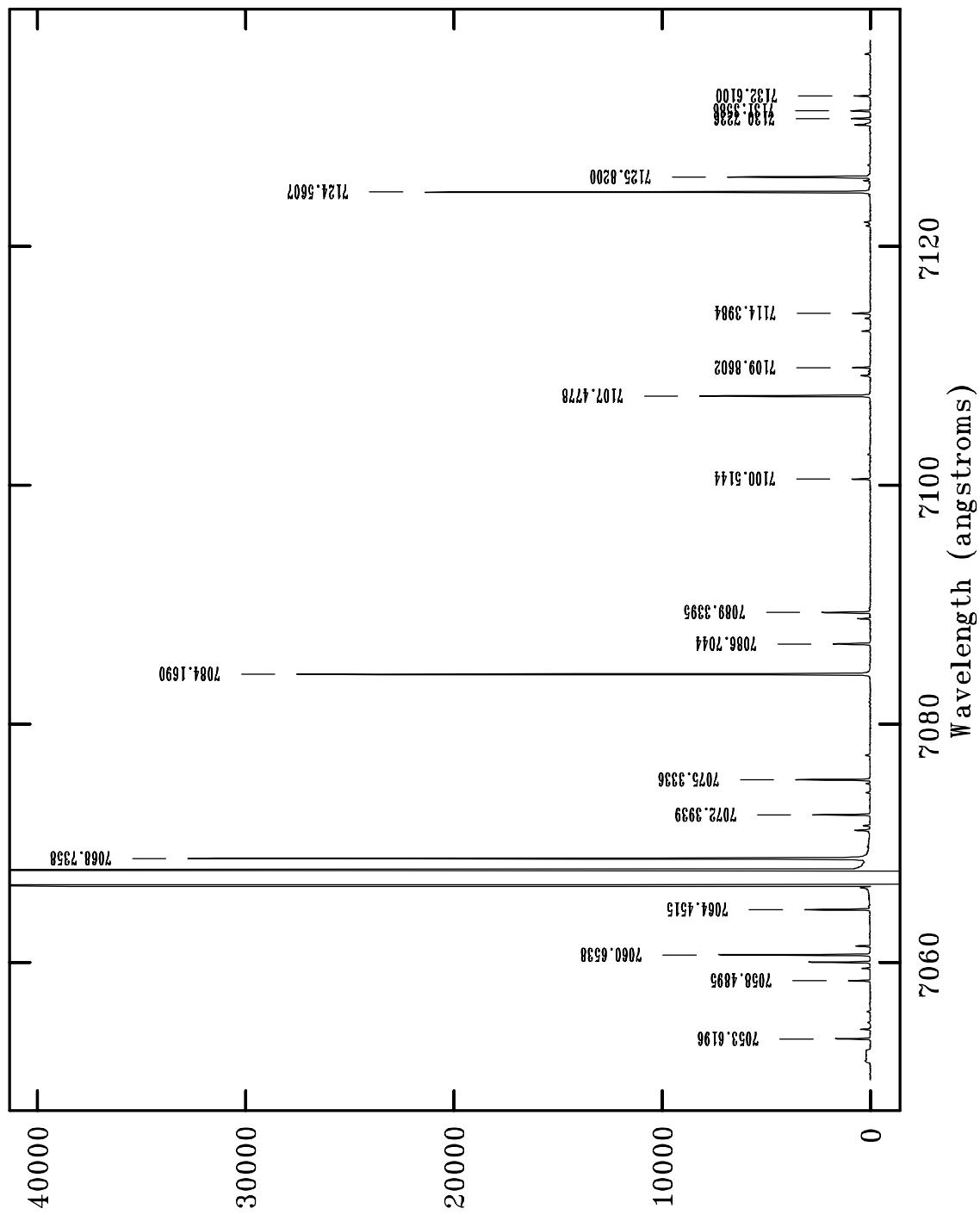
Echelle Order = 85

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 15:59:32 30-Nov-2000
Aperture 13, Image line 13, Order 85
identify 063: UNKNOWN



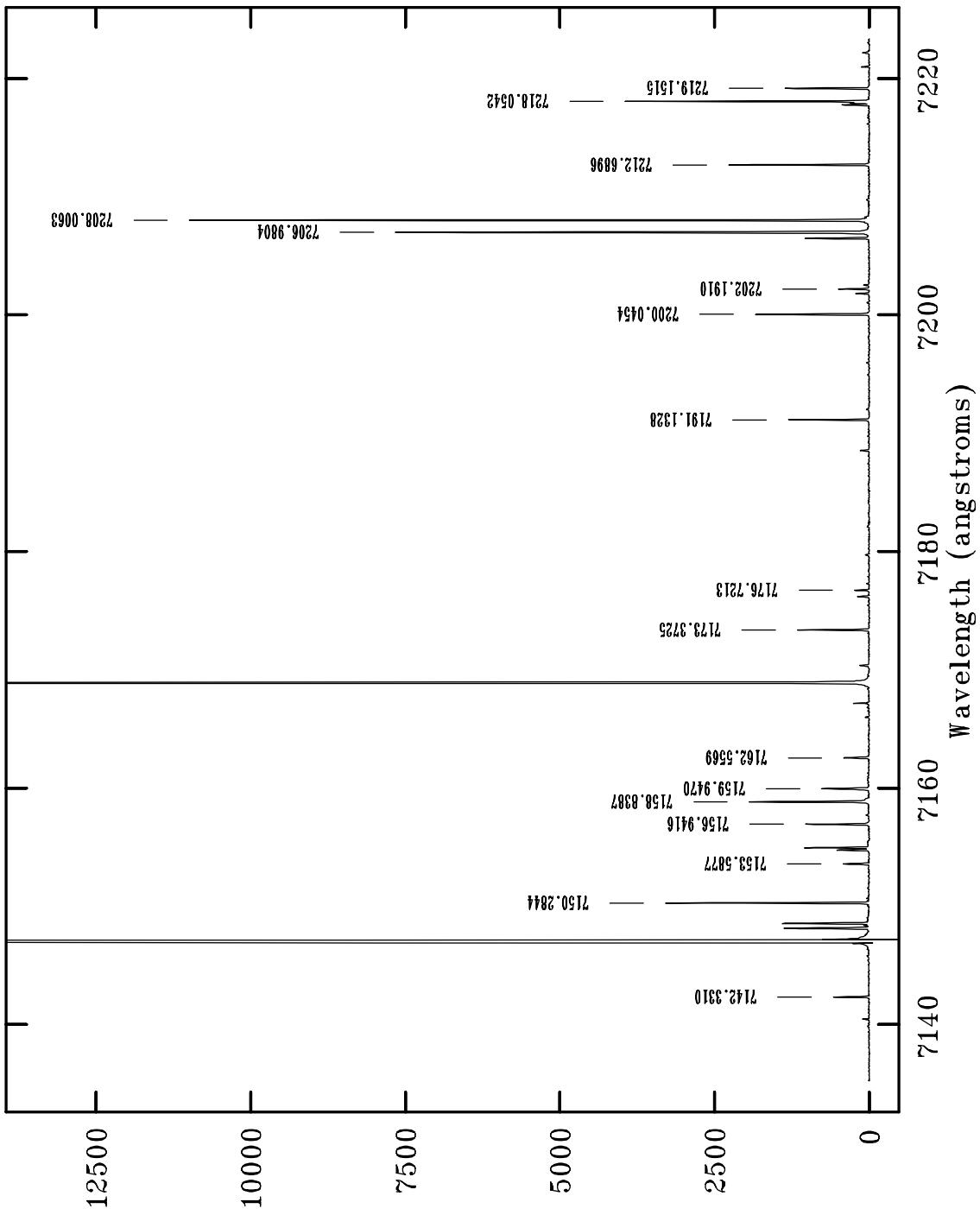
Echelle Order = 84

NOAO/IRAF V2.11.3EXPORT honda@hds Thu 15:59:12 30-Nov-2000
Aperture 12, Image line 12 Order 84
identify 063: UNKNOWN



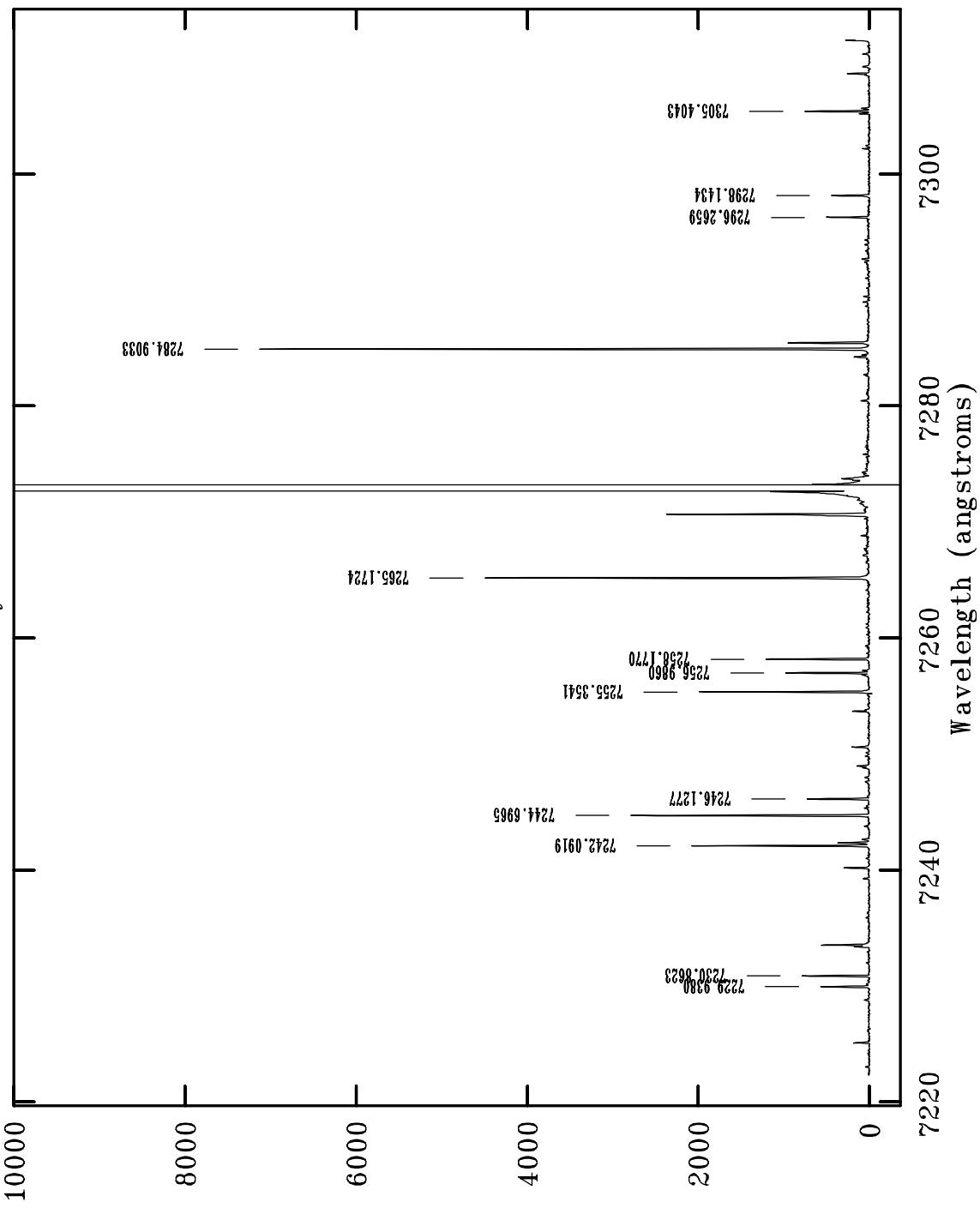
Echelle Order = 83

NOAO / IRAF V2.11.3EXPORT honda@hds Wed 18:01:07 13-Sep-2000
Aperture 11, Image line 11, Order 83
identify 063: UNKNOWN



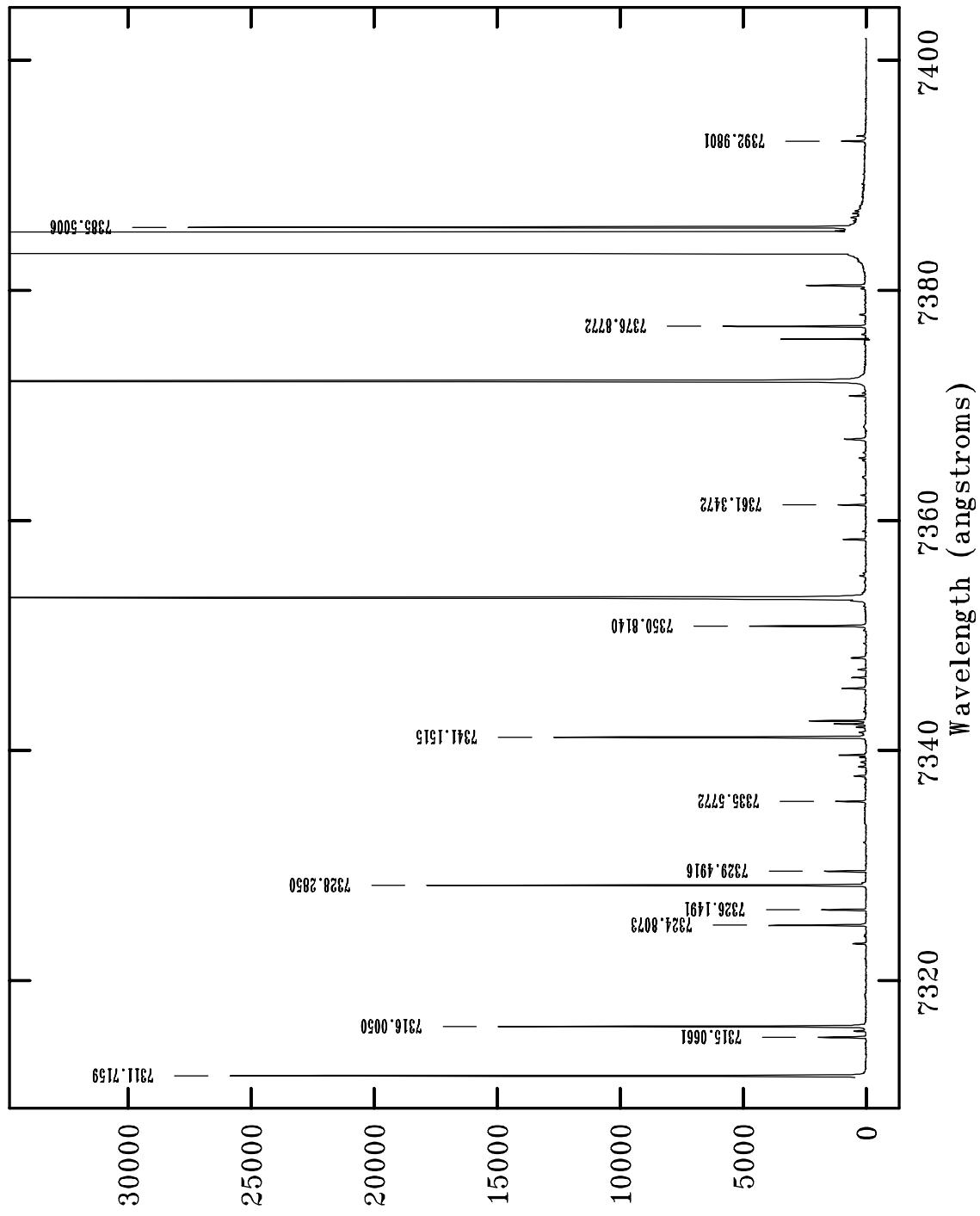
Echelle Order = 82

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 15:48:18 30-Nov-2000
Aperture 10, Image line 10 Order 82
identify 063: UNKNOWN



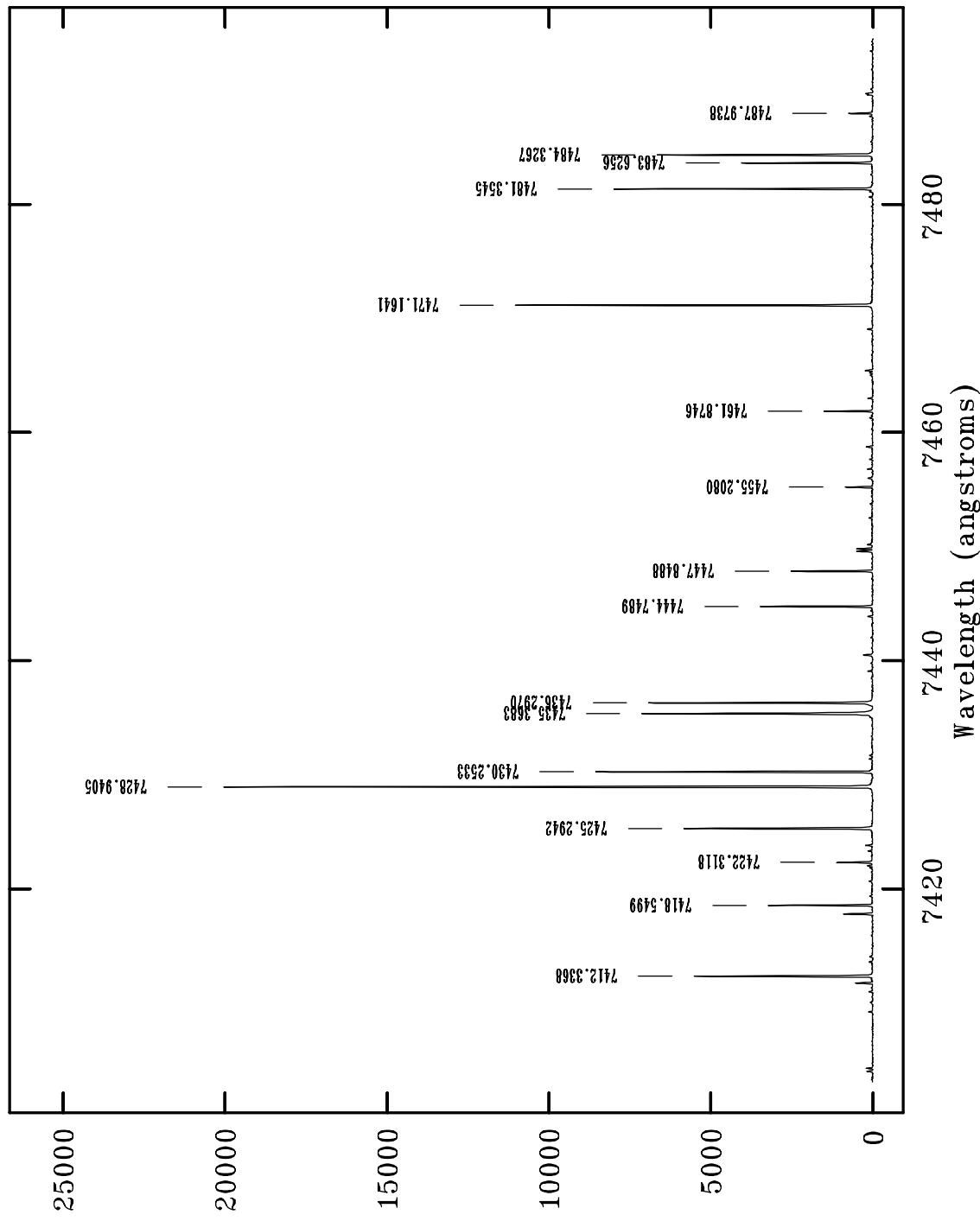
Echelle Order = 81

NOAO / IRAF V2.11.3EXPORT honda@hds Aperture 9, Image line 9, Order 81
identify 063: UNKNOWN



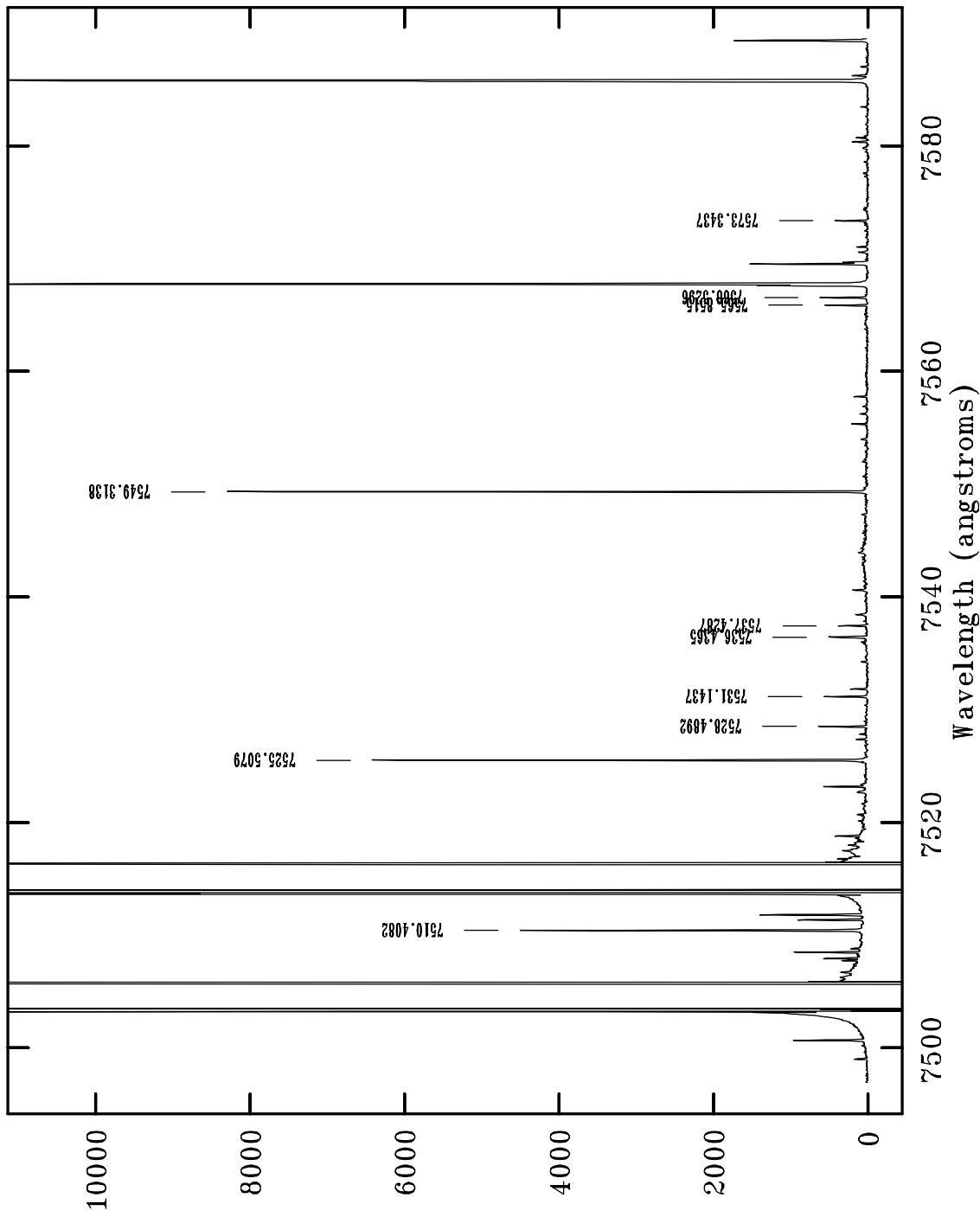
Echelle Order = 80

NOAO/IRAF V2.11.3EXPORT honda@hds Fri 22:06:04 08-Sep-2000
Aperture 8, Image line 8, Order 80
ecidentity 063: UNKNOWN



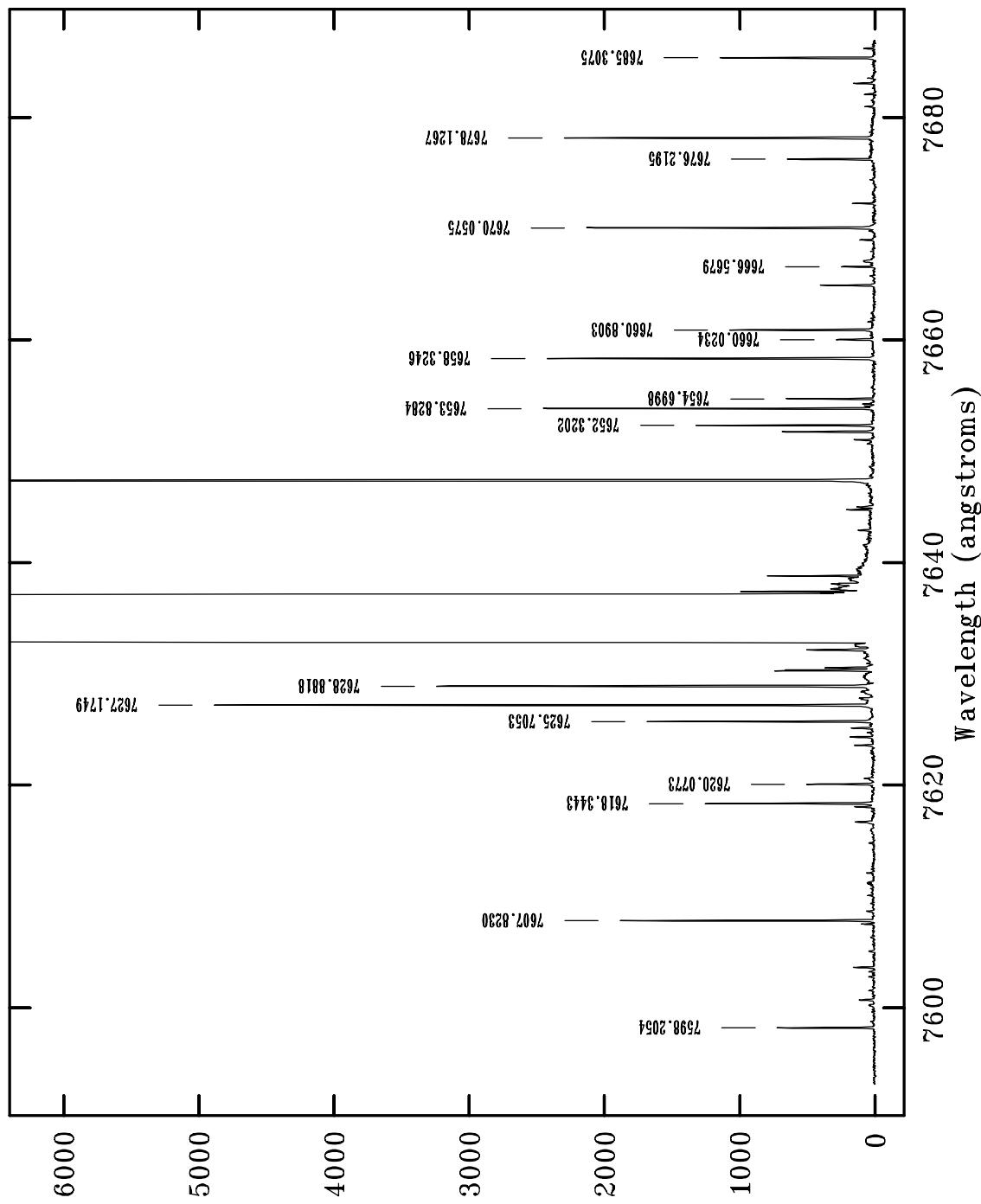
Echelle Order = 79

NOAO / IRAF V2.11.3EXPORT honda@hds Fri 22:04:42 08-Sep-2000
Aperture 7, Image line 79, Order 79
identify 063: UNKNOWN



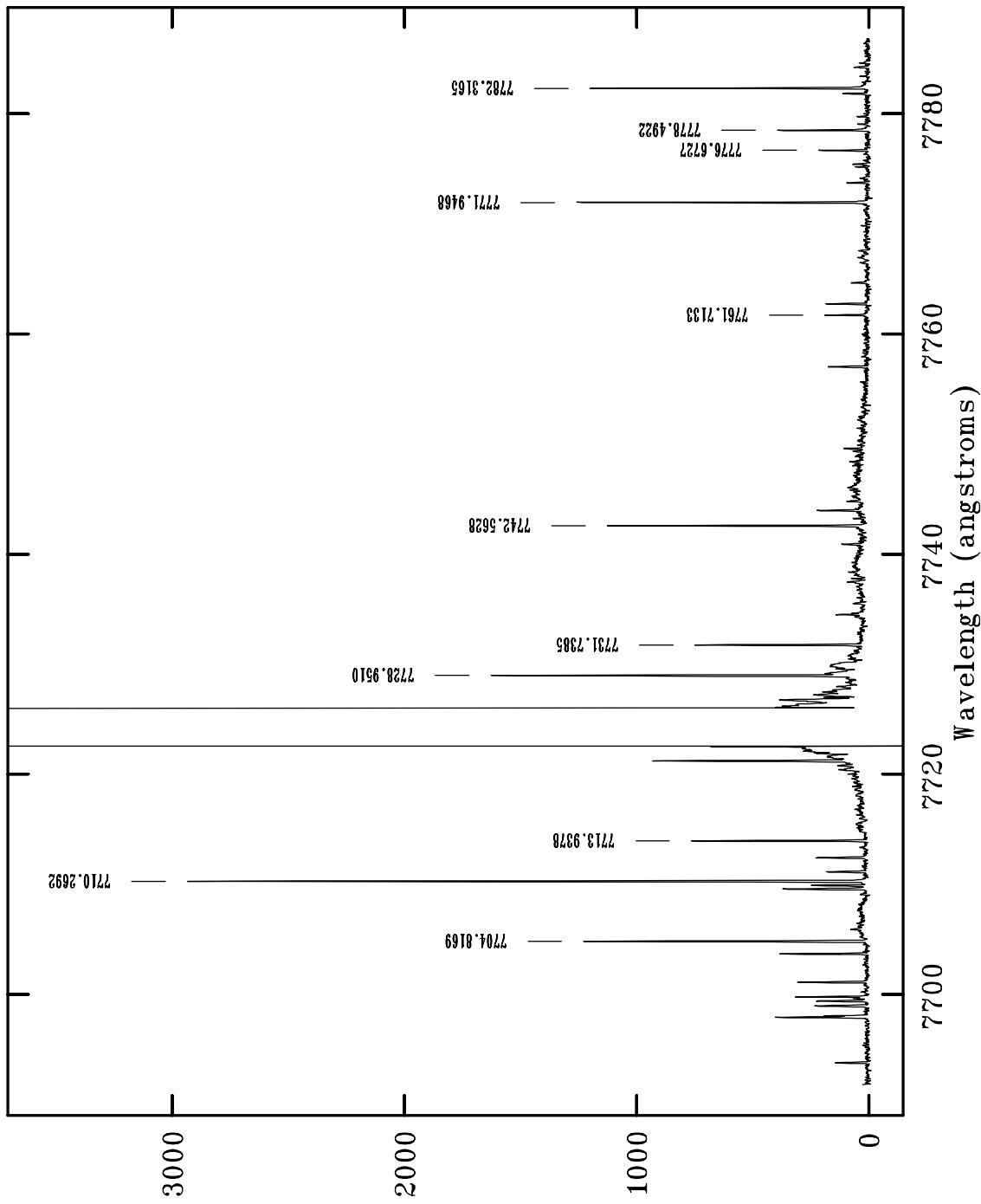
Echelle Order = 78

NOAO/IRAF V2.11.3EXPORT honda@hds Fri 22:02:03 08-Sep-2000
Aperture 6, Image line 6, Order 78
ecidentify 063: UNKNOWN



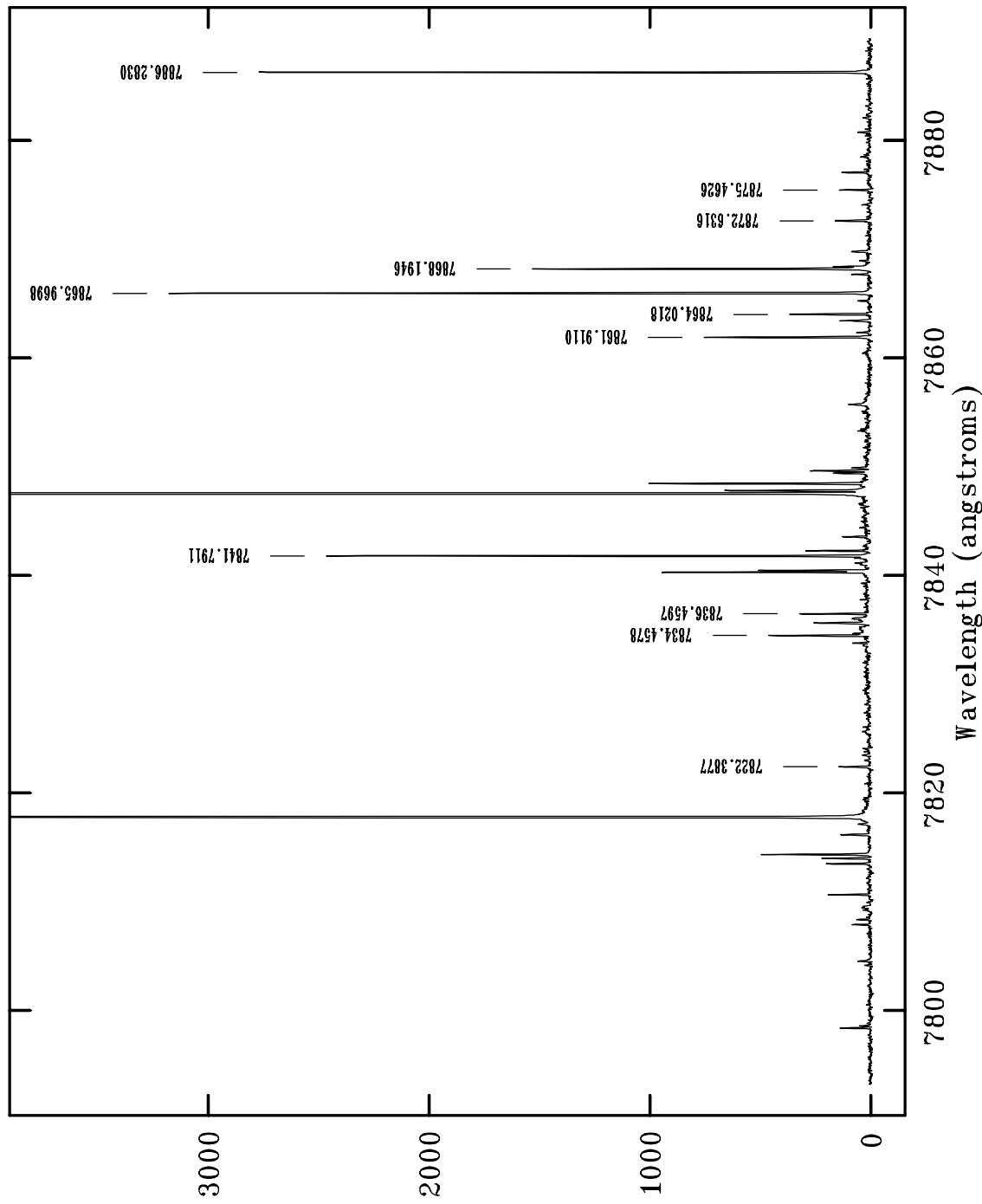
Echelle Order = 77

NOAO/IRAF V2.11.3EXPORT honda@hds Fri 21:58:51 08-Sep-2000
Aperture 5, Image line 5, Order 77
ecidify 063: UNKNOWN



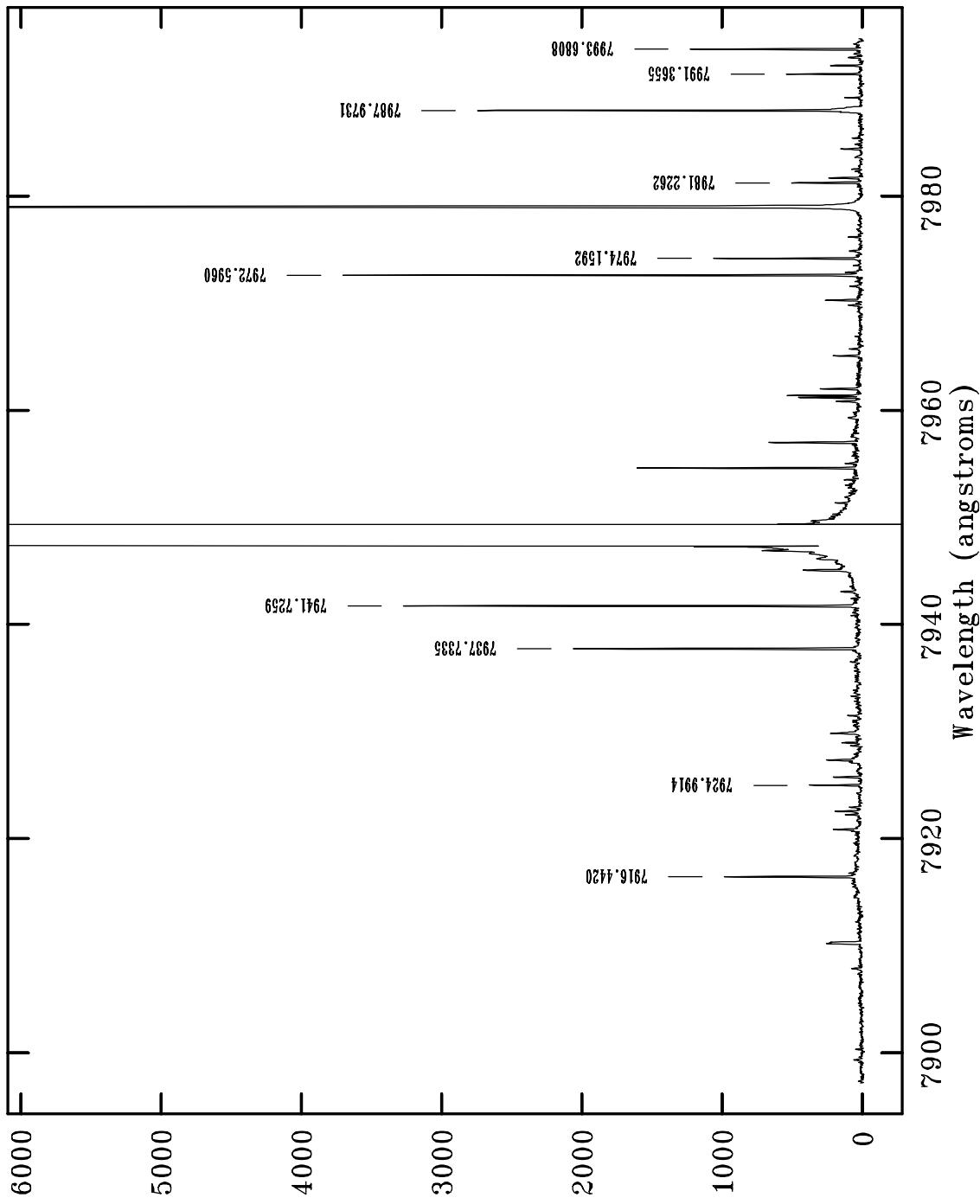
Echelle Order = 76

NOAO/IRAF V2.11.3EXPORT honda@hds Fri 15:01:49 08-Sep-2000
Aperture 4, Image line 4 Order 763: UNKNOWN
ecidentify 063: UNKNOWN



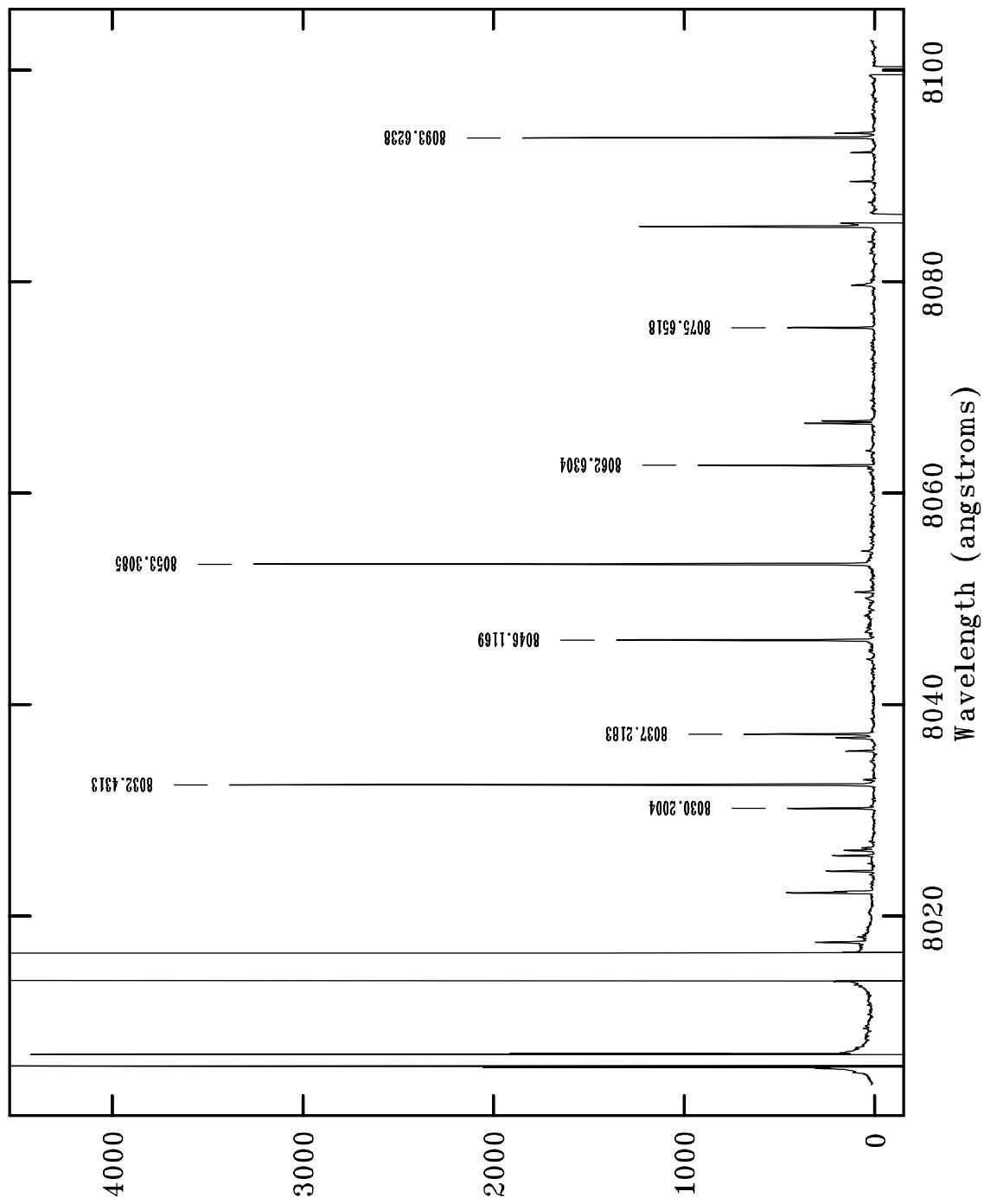
Echelle Order = 75

NOAO/IRAF V2.11.3EXPORT honda@hds Fri 15:00:03 08-Sep-2000
Aperture 3, Image line 3, Order 75
identify 063: UNKNOWN



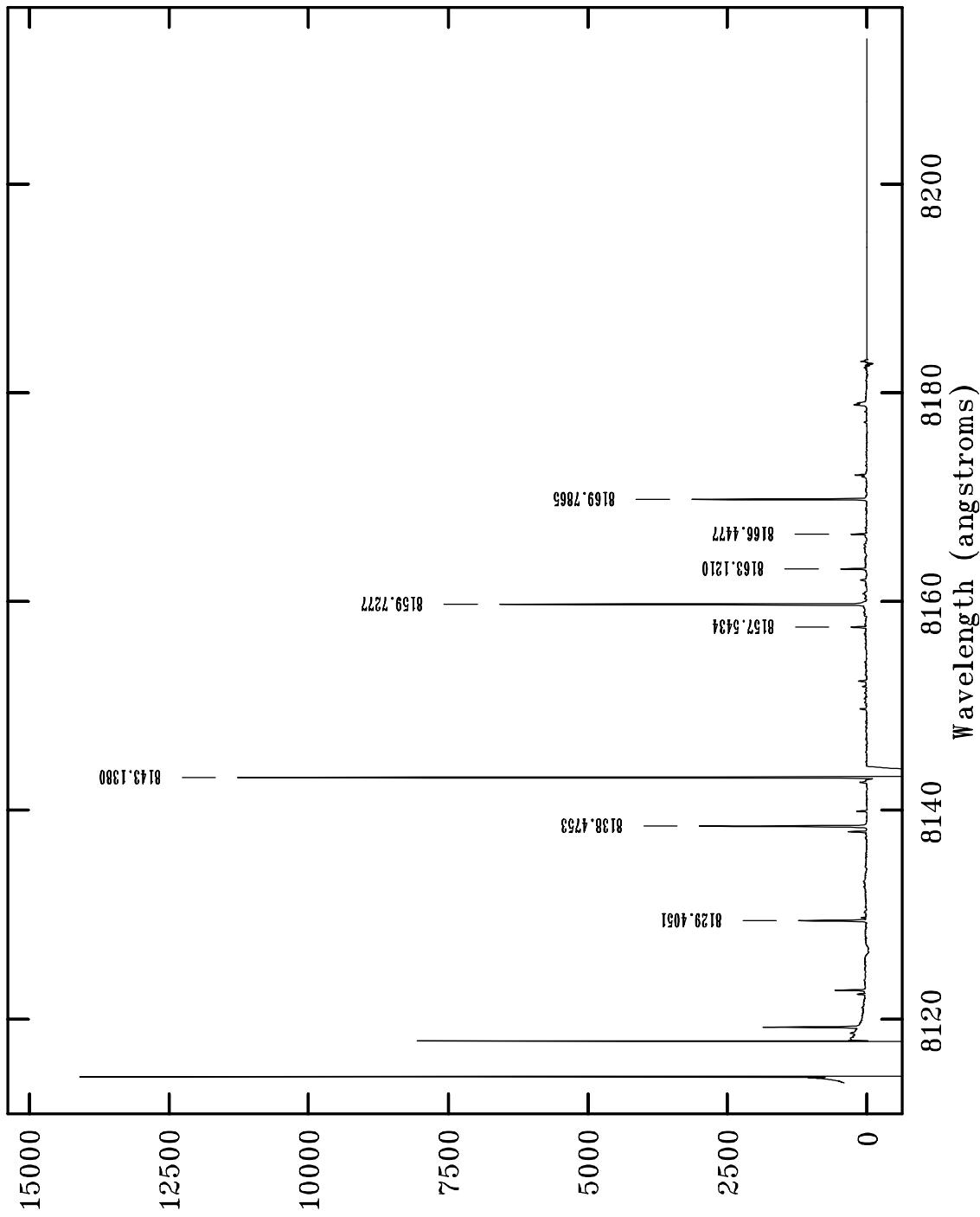
Echelle Order = 74

NOAO/IRAF V2.11.3EXPORT honda@hds Fri 14:56:38 08-Sep-2000
Aperture 2, Image 2, Order 74
ecidentify 063: UNKNOWN



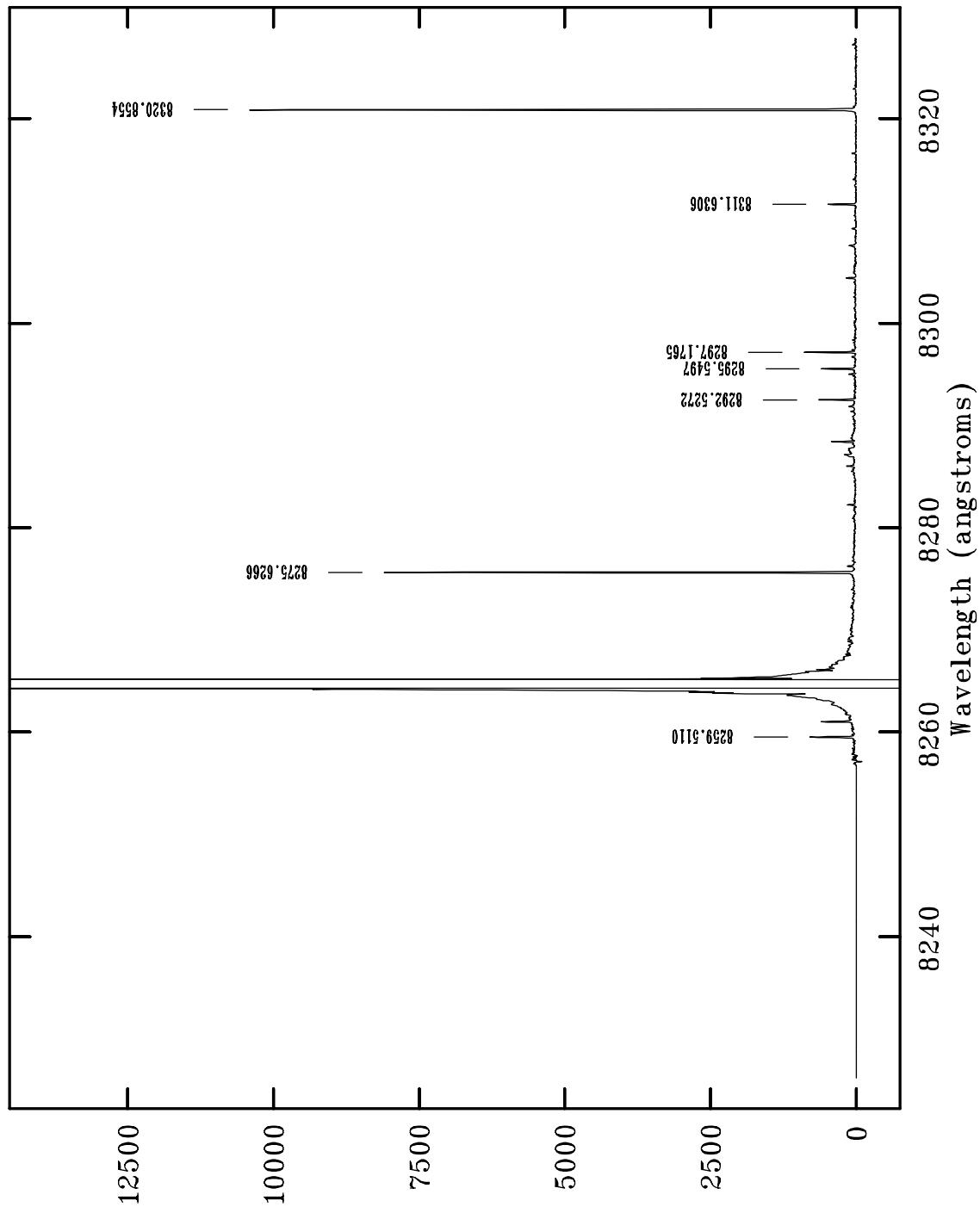
Echelle Order = 73

NOAO/IRAF V2.11.3EXPORT
Aperture 1, Image line 1, Order 73
identify 063: UNKNOWN



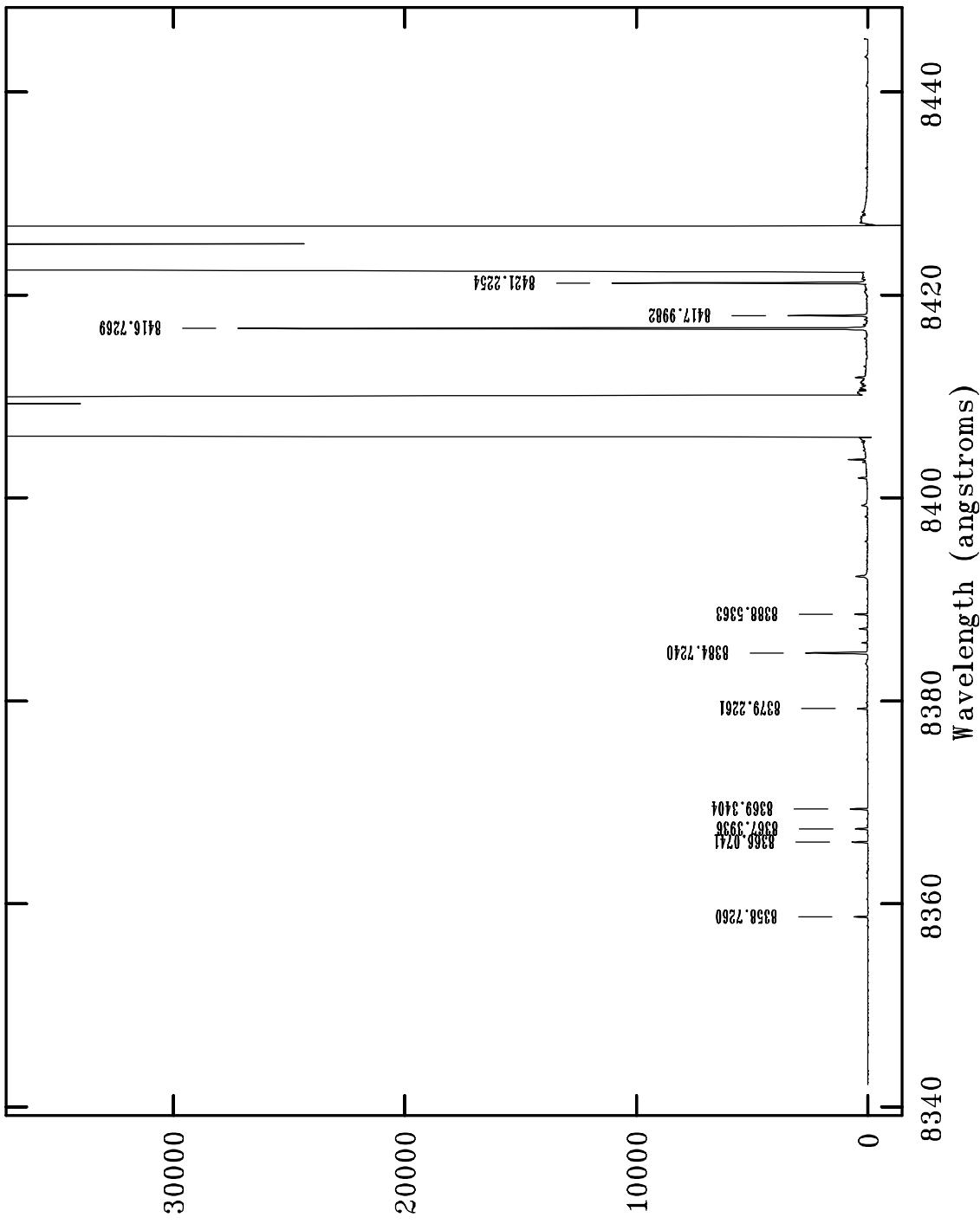
Echelle Order = 72

NOAO/IRAF V2.11.3EXPORT honda@hds Thu 15:11:35 30-Nov-2000
Aperture 11, Image line 11 Order 72
ecidentity 062: UNKNOWN



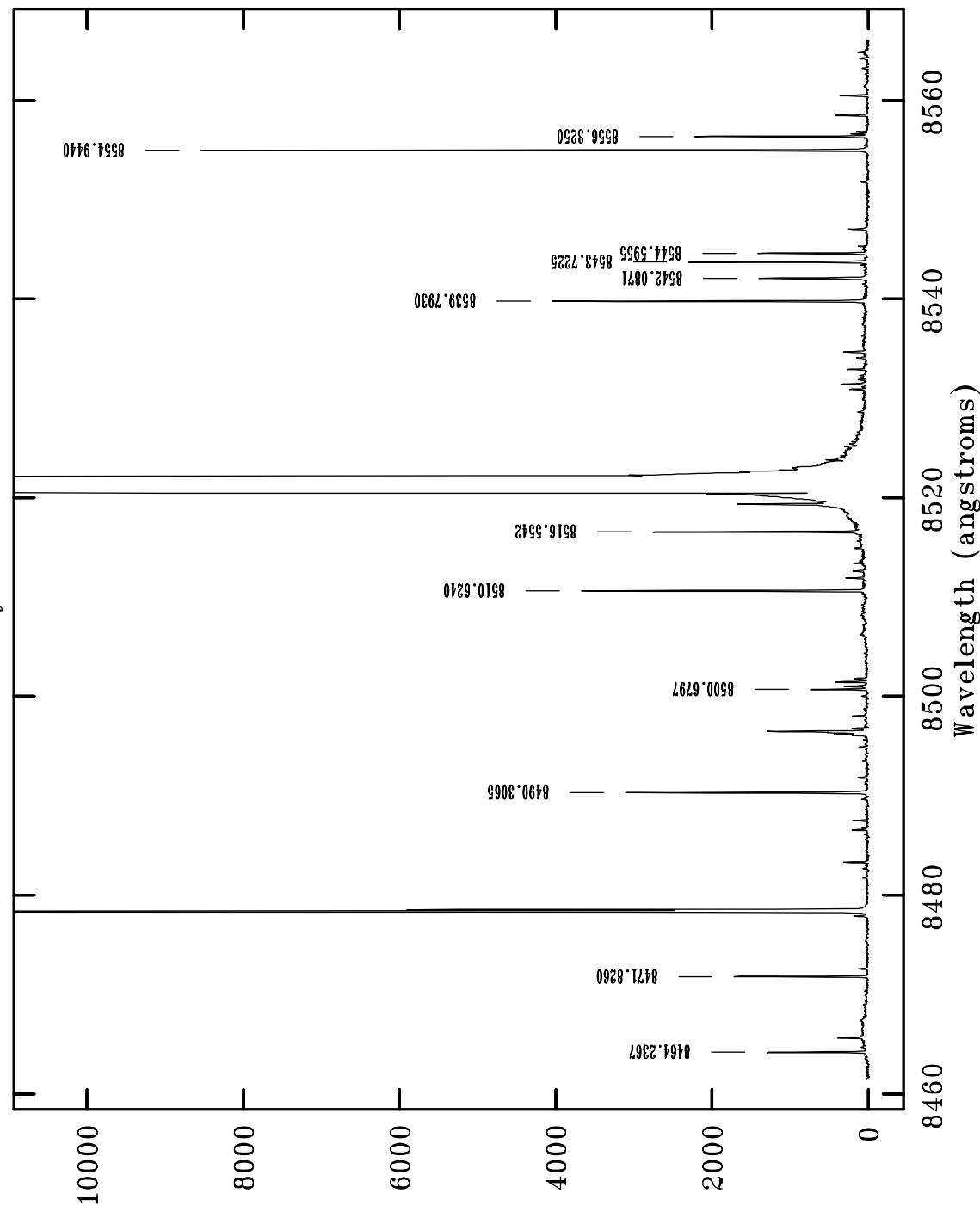
Echelle Order = 71

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 15:10:40 30-Nov-2000
Aperture 10, Image line 10, Order 71
identify 062: UNKNOWN



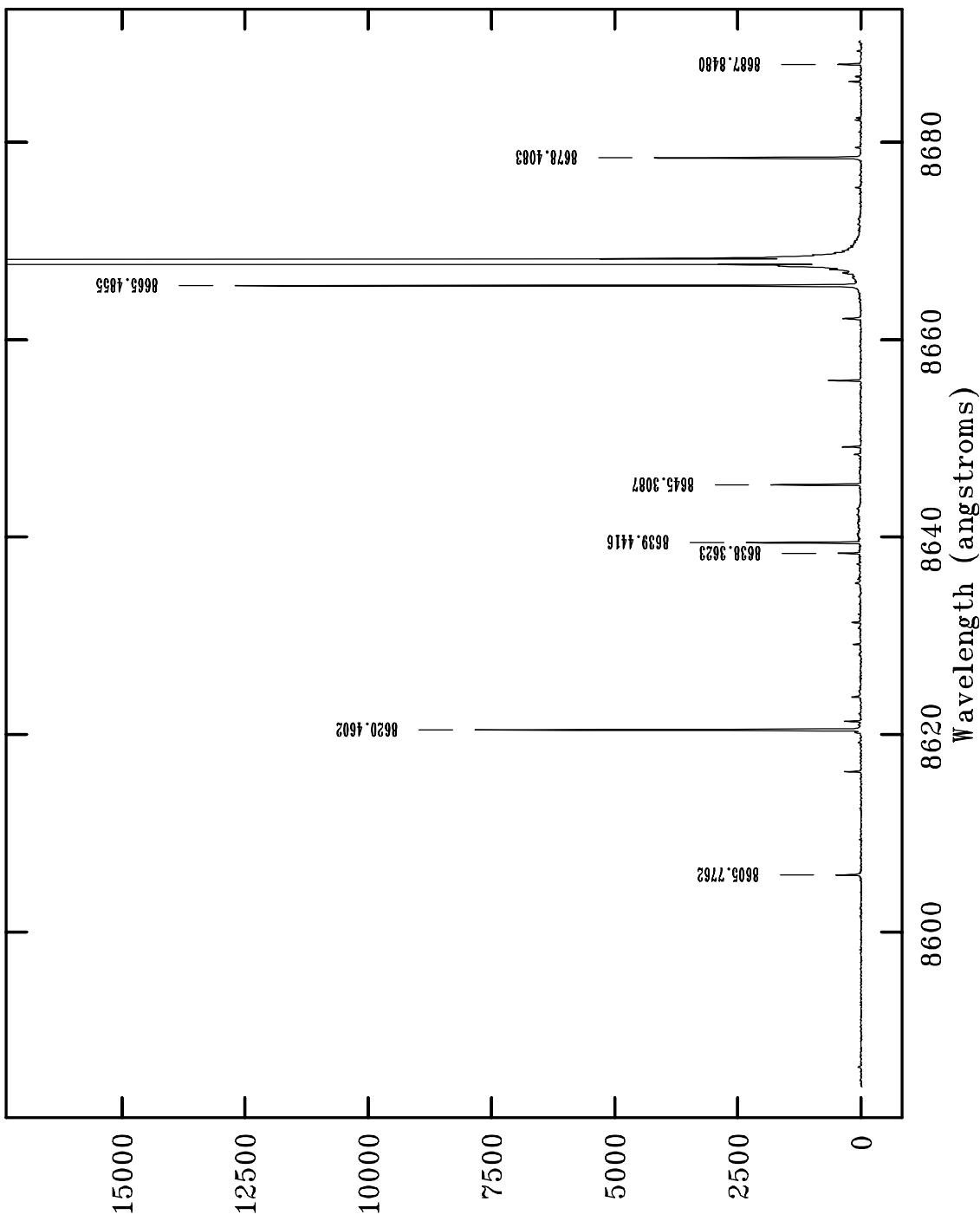
Echelle Order = 70

NOAO/IRAF V2.11.3EXPORT honda@hds Fri 13:37:51 08-Sep-2000
Aperture 9, Image line 9, Order 70
ecidentify 062: UNKNOWN



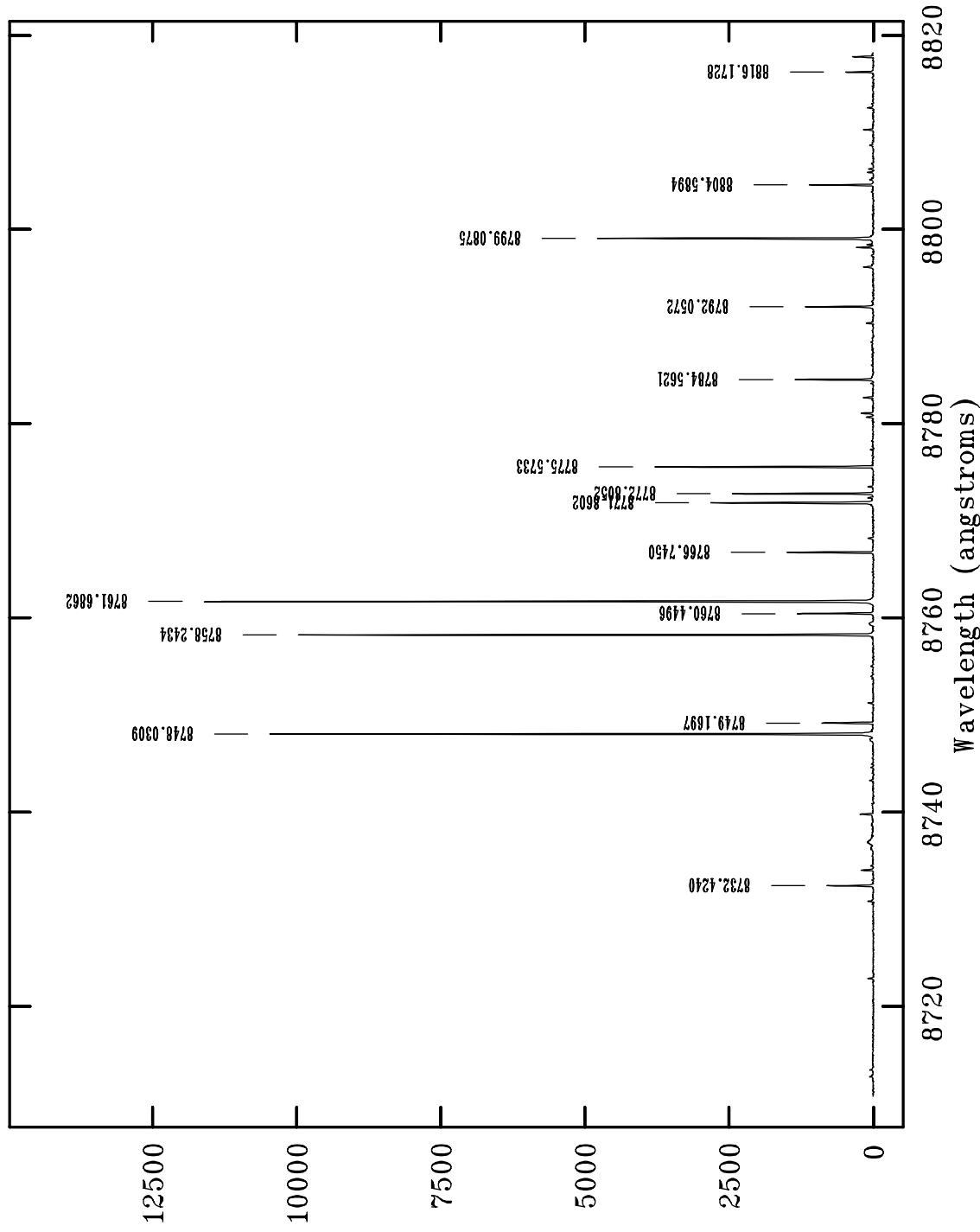
Echelle Order = 69

NOAO / IRAF V2.11.3EXPORT honda@hds Aperture 8, Image line 8, Order 69
identify 062: UNKNOWN



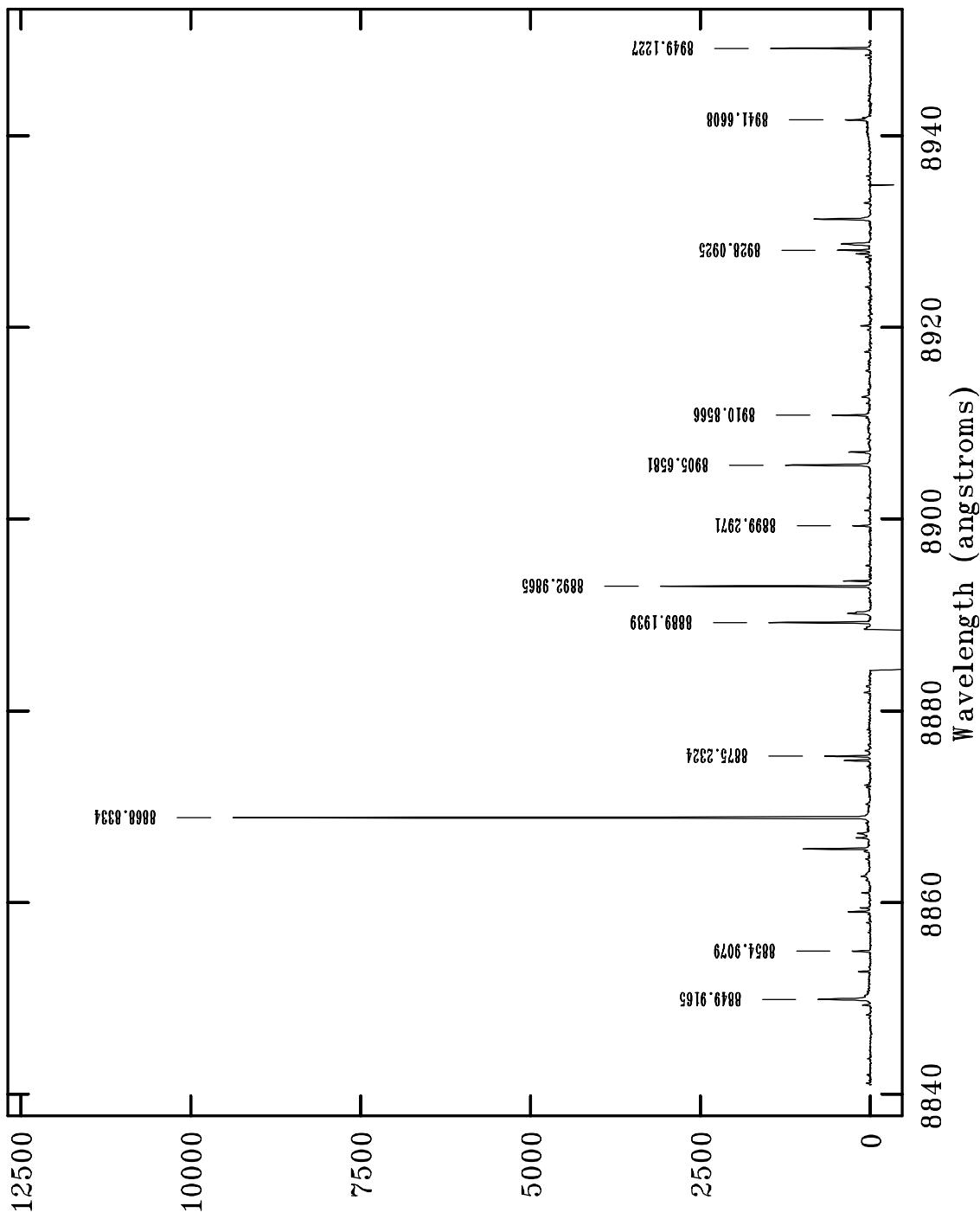
Echelle Order = 68

NOAO/IRAF V2.11.3EXPORT honda@hds Fri 13:32:15 08-Sep-2000
Aperture 7, Image line 7 Order 68
identify 062: UNKNOWN



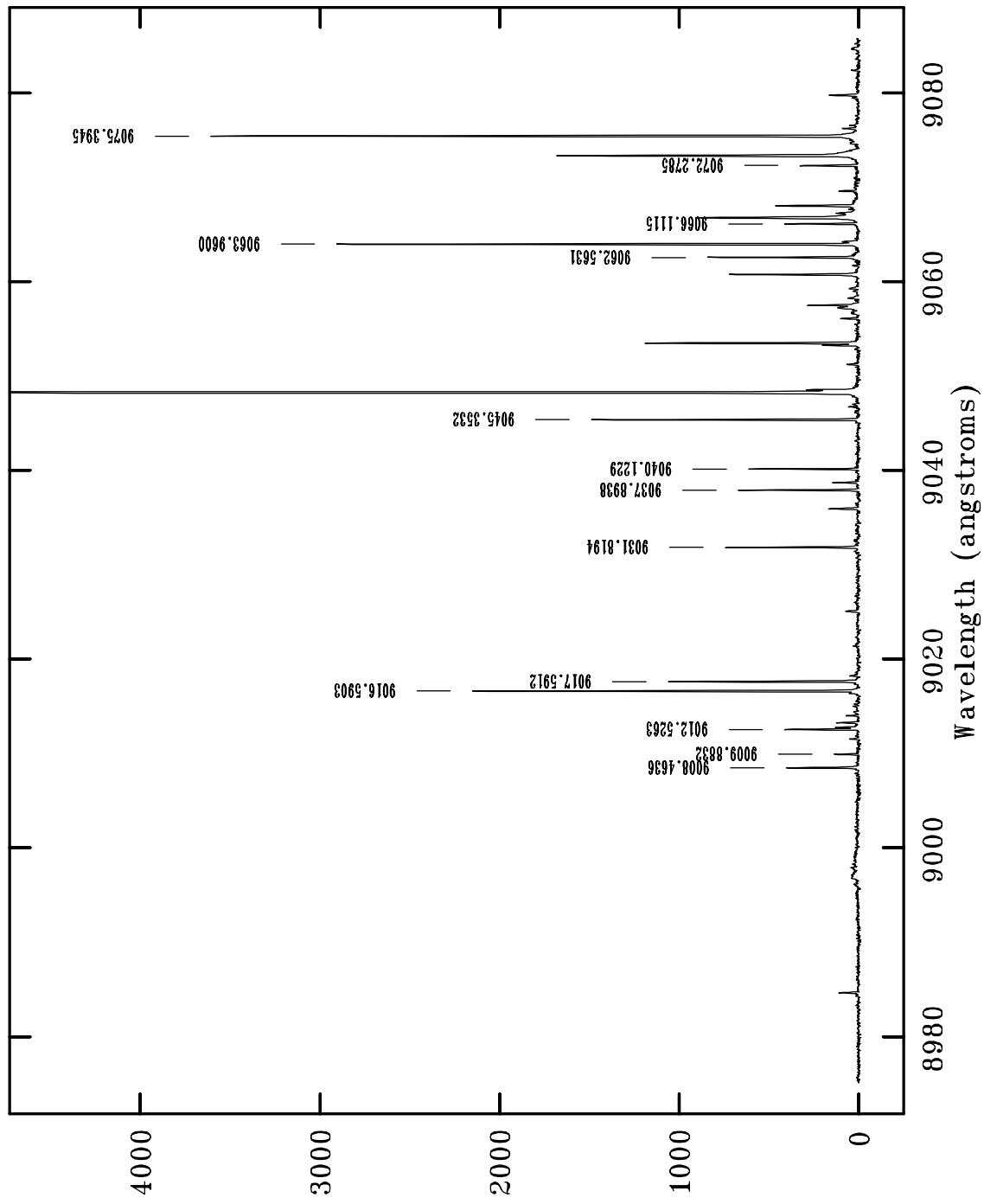
Echelle Order = 67

NOAO/IRAF V2.11.3EXPORT honda@hds Fri 13:26:44 08-Sep-2000
Aperture 6, Image line 6, Order 67
identify 062: UNKNOWN



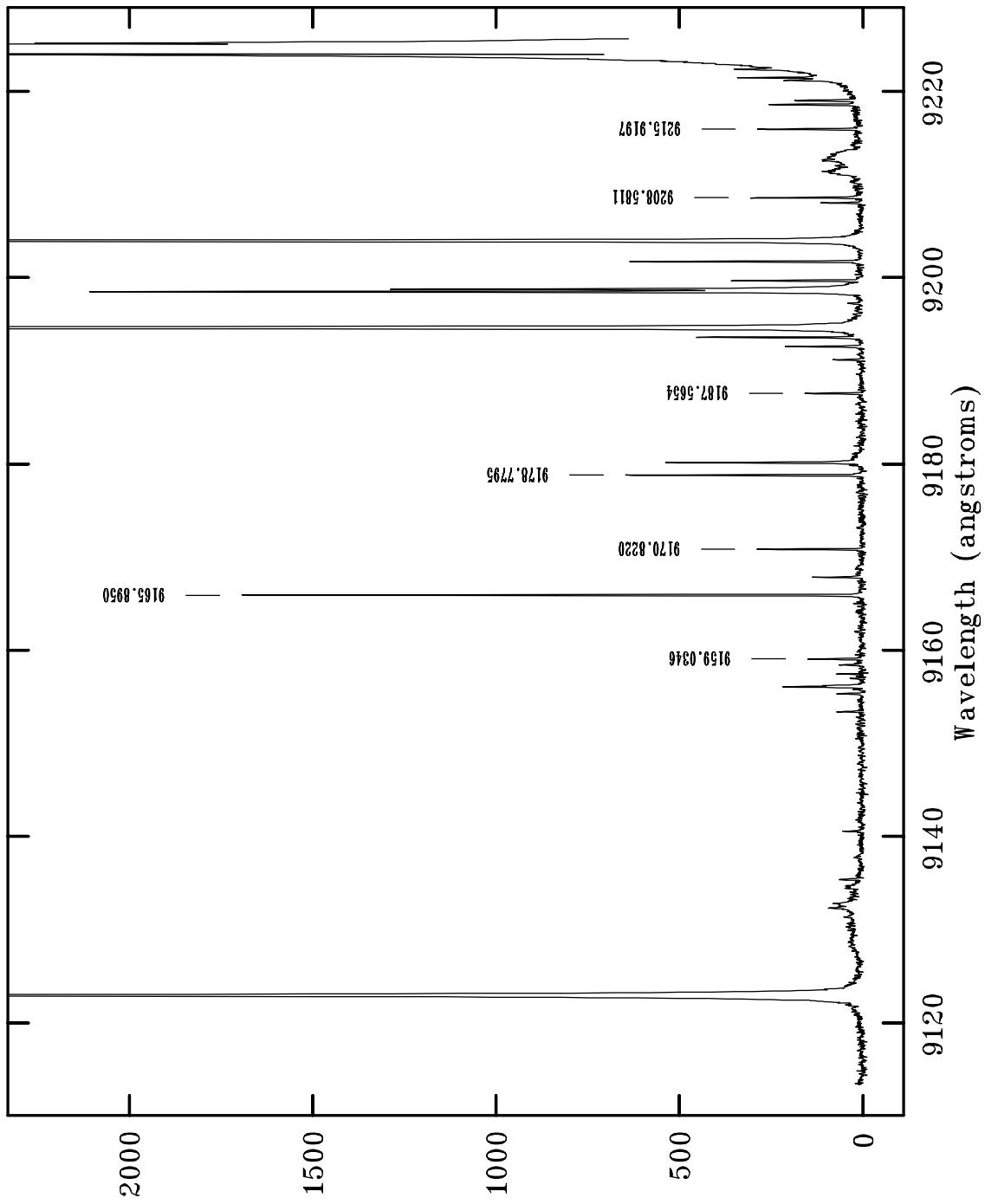
Echelle Order = 66

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 15:06:28 30-Nov-2000
Aperture 5, Image line 5 Order 66
ecidify 062: UNKNOWN



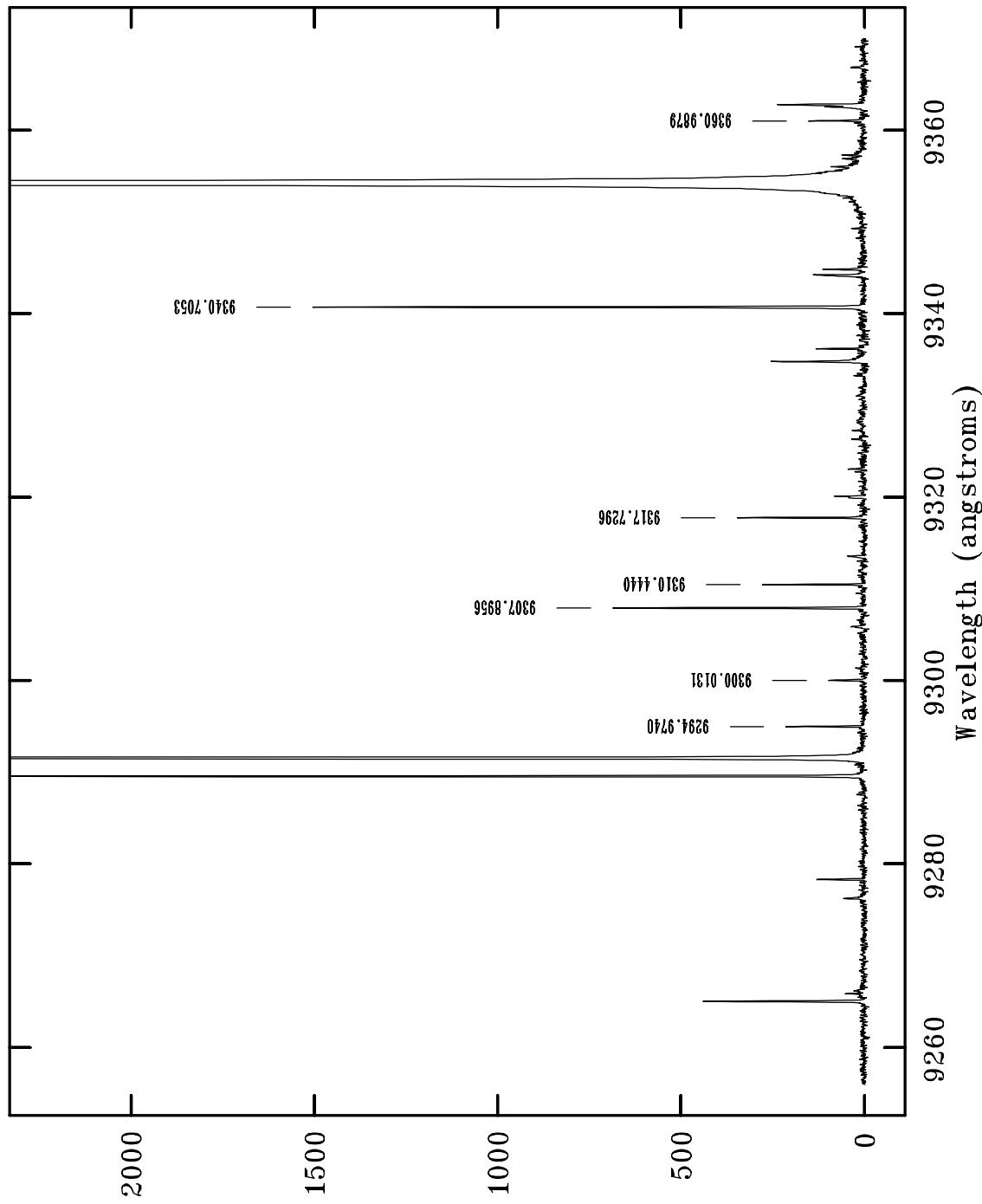
Echelle Order = 65

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 15:04:02 30-Nov-2000
Aperture 4, Image line 4, Order 65
identify 062: UNKNOWN



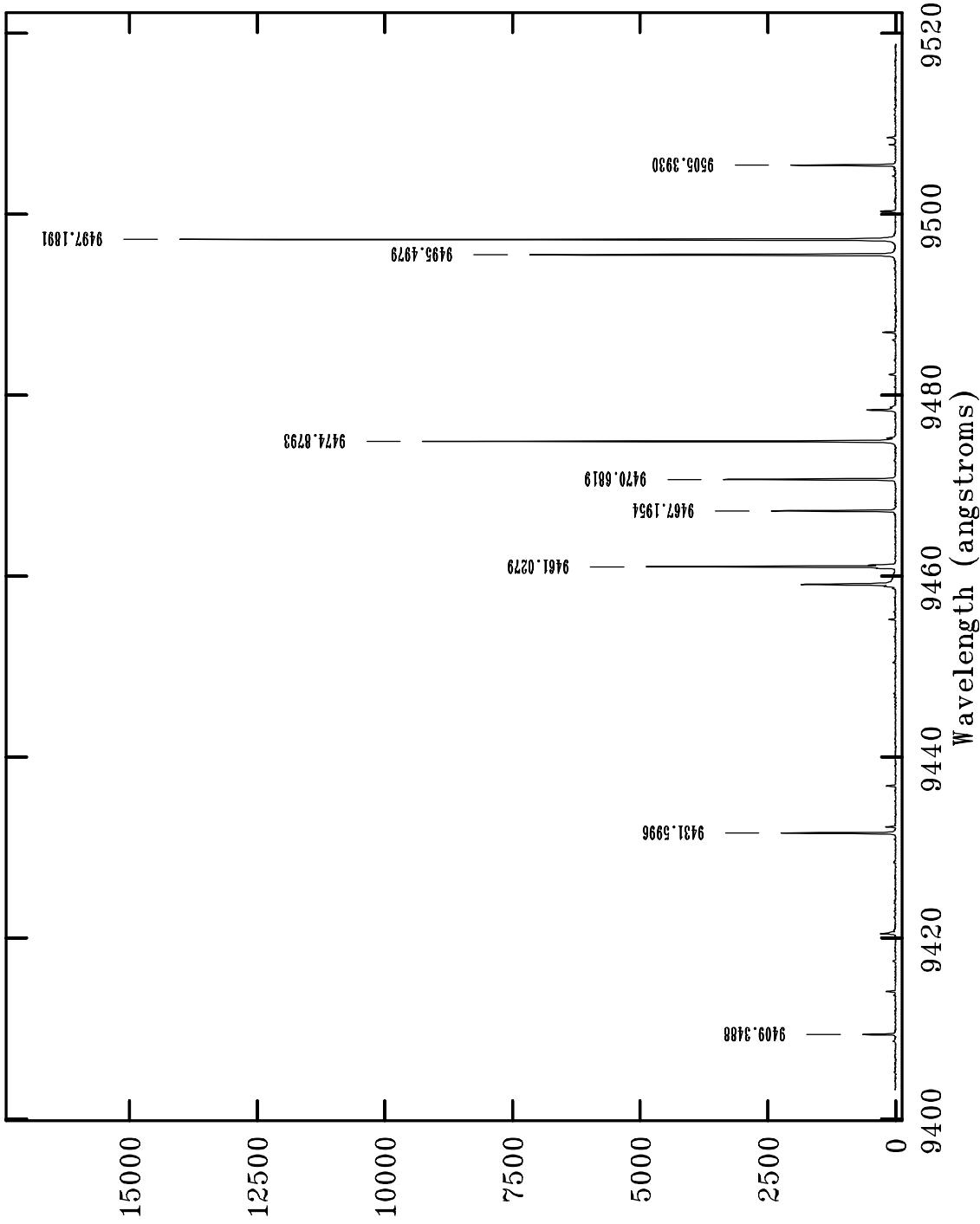
Echelle Order = 64

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 15:02:57 30-Nov-2000
Aperture 3, Image 3, Order 64
ecidify 062: UNKNOWN



Echelle Order = 63

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 17:51:16 07-Sep-2000
Aperture 2, Image 2, Order 63
identify 062: UNKNOWN



Echelle Order = 62

NOAO / IRAF V2.11.3EXPORT honda@hds Thu 22:55:50 07-Sep-2000
Aperture 1, Image 1, Order 62 UNKNOWN
identify 062: UNKNOWN

