

Southern African Large Telescope



Title: Atlas of Reference Spectra for RSS Observations

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Signature: _____ Date: _____

ABSTRACT

In this document current version of SALT atlases of reference spectra is presented. Spectra of Ar, CuAr, Ne, ThAr and Xe lamps are collected and identified for many RSS setups. For each setup the best lines are shown with their wavelengths. Calculated accuracies are also shown.



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1 Introduction

Here should be the information about how important to have identified reference spectra.

For all reference spectra shown below not all spectral lines are shown but only which finally were used for creating of 2D wavelength calibrations.

2 Reference spectrum for Ar

2.1 Total Spectral Range

2.2 Spectra with Higher Resolution

See Figure 1 for spectrum covered spectral range 4200–4950 Å and output for IRAF program identify below. The first column is the pixel number.

```
image  Ar_PG3000_87.25_43.62_2x2[* ,448]
units  Angstroms
features 24
      84.45 4251.17849 4251.185 6.0 1 1 26
      117.72 4259.3567 4259.362 6.0 1 1 148
      145.98 4266.28811 4266.286 6.0 1 1 67
      169.97 4272.16315 4272.169 6.0 1 1 163
      284.61 4300.11578 4300.101 6.0 1 1 129
      471.29 4345.18924 4345.168 6.0 1 1 45
      483.20 4348.04553 4348.064 6.0 1 1
      549.10 4363.81004 4363.795 6.0 1 1 3
      803.26 4423.94481 4423.994 6.0 1 1 4
      812.19 4426.03834 4426.0011 6.0 1 1
      1178.63 4510.74589 4510.733 6.0 1 1 78
      1229.56 4522.33163 4522.323 6.0 1 1 24
      1329.85 4545.01043 4545.0519 6.0 1 1
      1558.77 4596.08395 4596.097 6.0 1 1 48
      1619.99 4609.57399 4609.5673 6.0 1 1
      1706.09 4628.42868 4628.441 6.0 1 1 17
      1842.06 4657.90876 4657.9012 6.0 1 1
      2050.35 4702.35843 4702.316 6.0 1 1 35
      2167.03 4726.8754 4726.8683 6.0 1 1
      2210.34 4735.90416 4735.9058 6.0 1 1
      2350.62 4764.87656 4764.8646 6.0 1 1
      2553.35 4806.00287 4806.0205 6.0 1 1
      2763.85 4847.74848 4847.8095 6.0 1 1
      2910.85 4876.30576 4876.261 6.0 1 1 6
function chebyshev
order 5
```

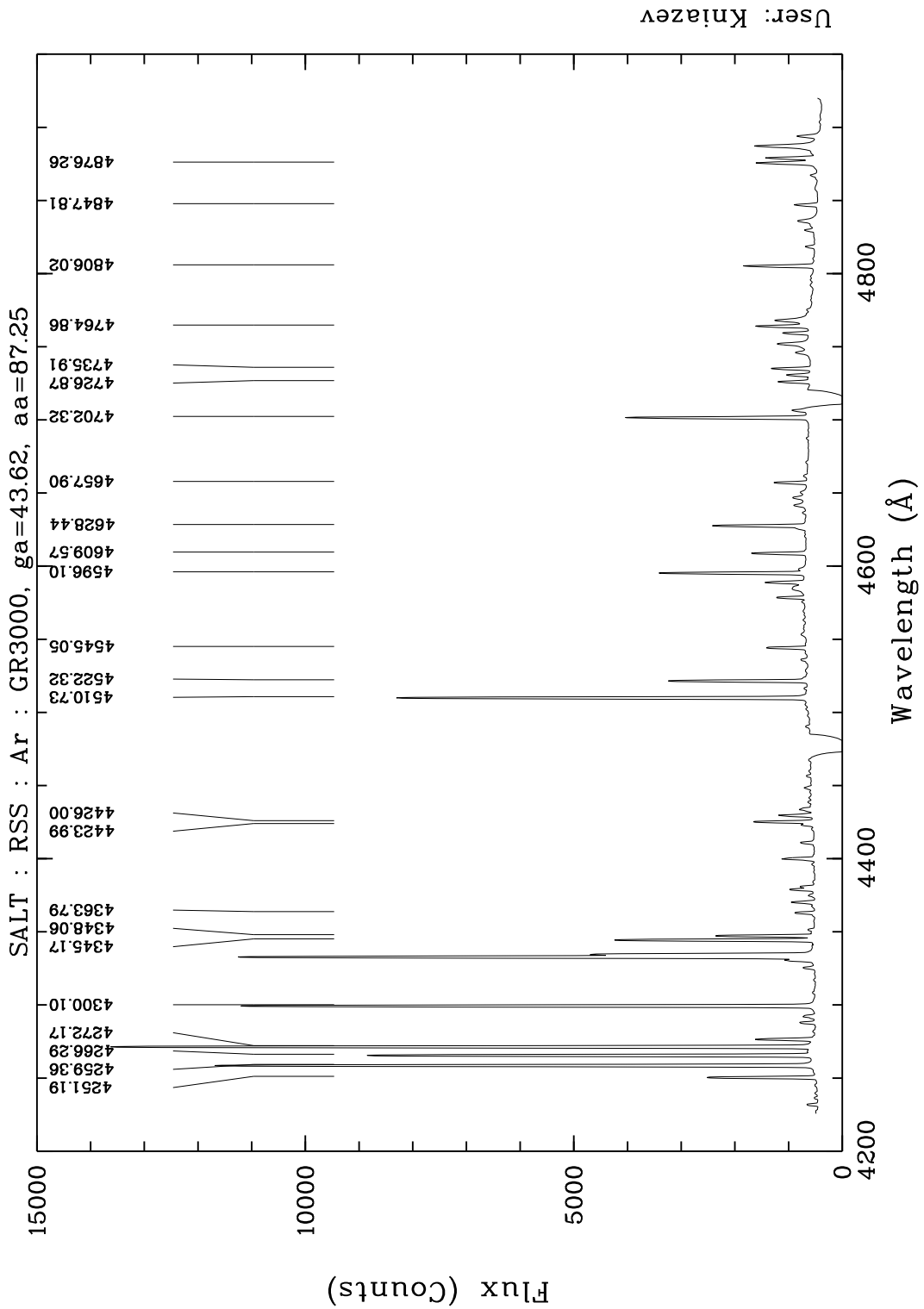


Figure 1: Grating GR3000 with Grating angle 43.62 and Articulation angle 87.25. Covered spectral range is 4200–4950 Å.



3 Reference spectrum for CuAr

3.1 Total Spectral Range

See Figure 2 for spectrum covered spectral range 3700–6700 Å.

3.2 Spectra with Higher Resolution

See Figure 3 for spectrum covered spectral range 3875–4625 Å.

See Figure 4 for spectrum covered spectral range 4710–5338 Å.

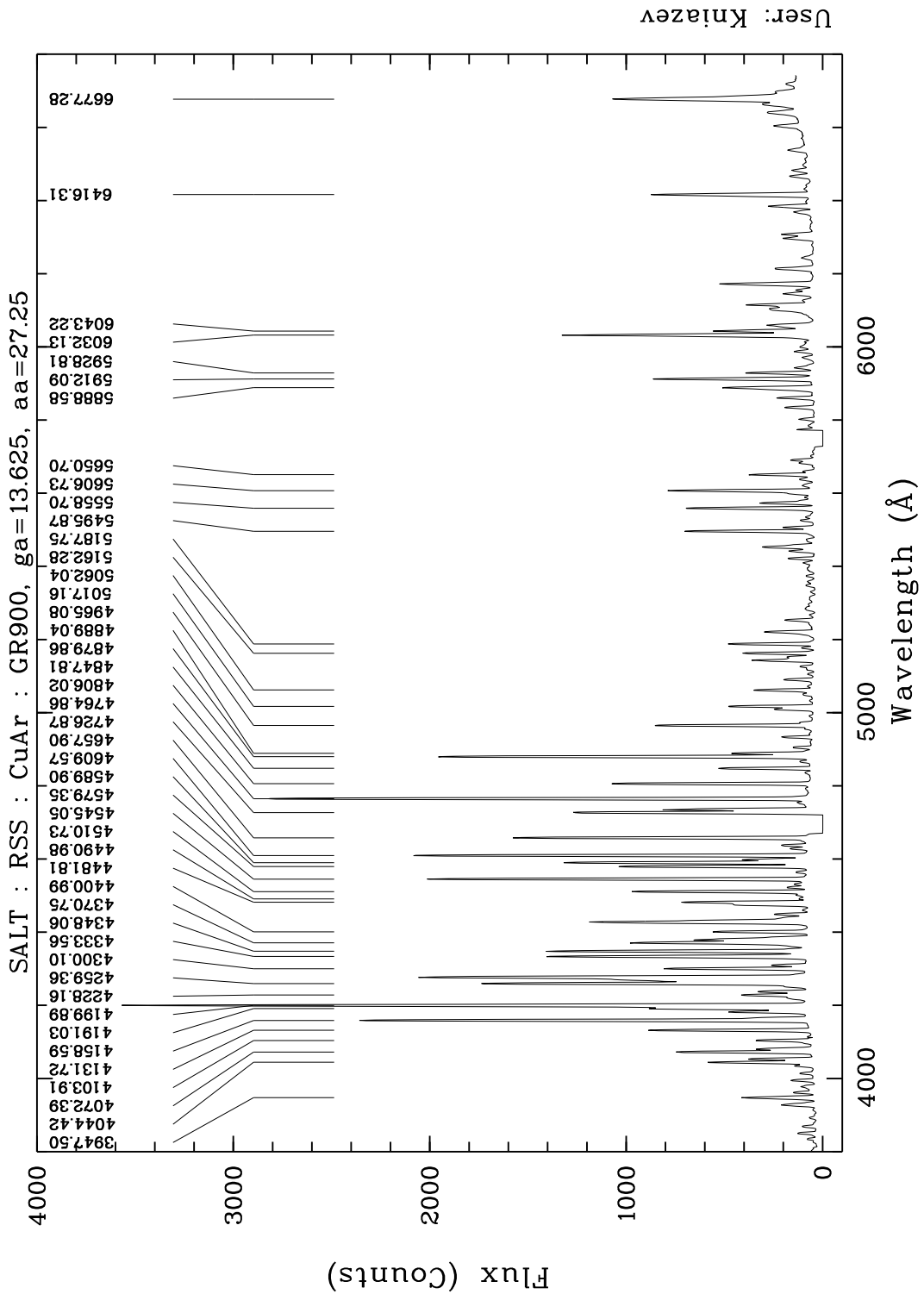


Figure 2: Grating GR900 with Grating angle 13.625 and Articulation angle 27.25. Covered spectral range is 3700–6700 Å.

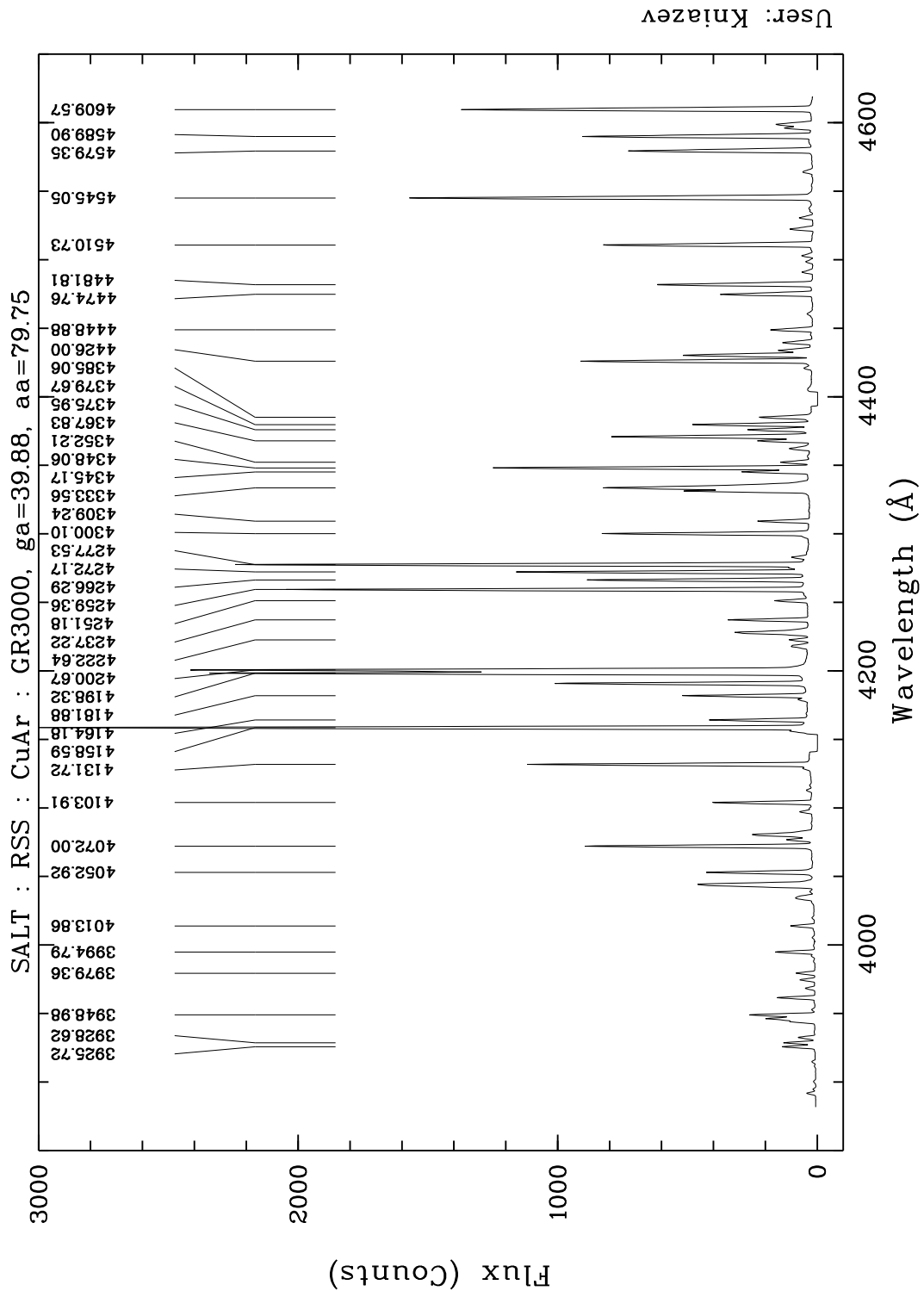


Figure 3: Grating GR3000 with Grating angle 39.88 and Articulation angle 79.75. Covered spectral range is 3875–4625 Å.

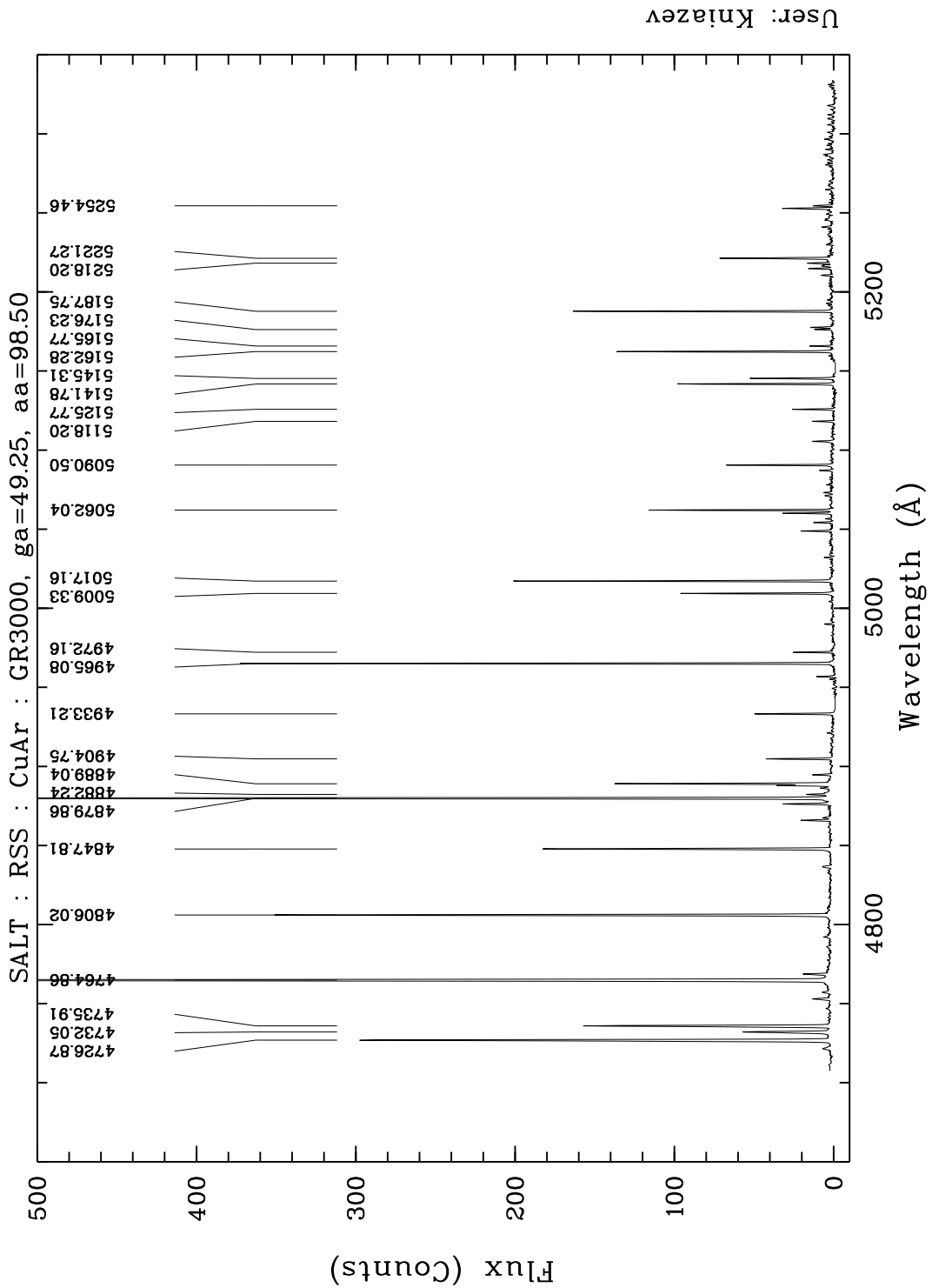


Figure 4: Grating GR3000 with Grating angle 49.25 and Articulation angle 98.50. Covered spectral range is 4710–5338 Å.



4 Reference spectrum for Ne

4.1 Total Spectral Range

4.2 Spectra with Higher Resolution

See Figure 5 for spectrum covered spectral range 5865-7164 Å.

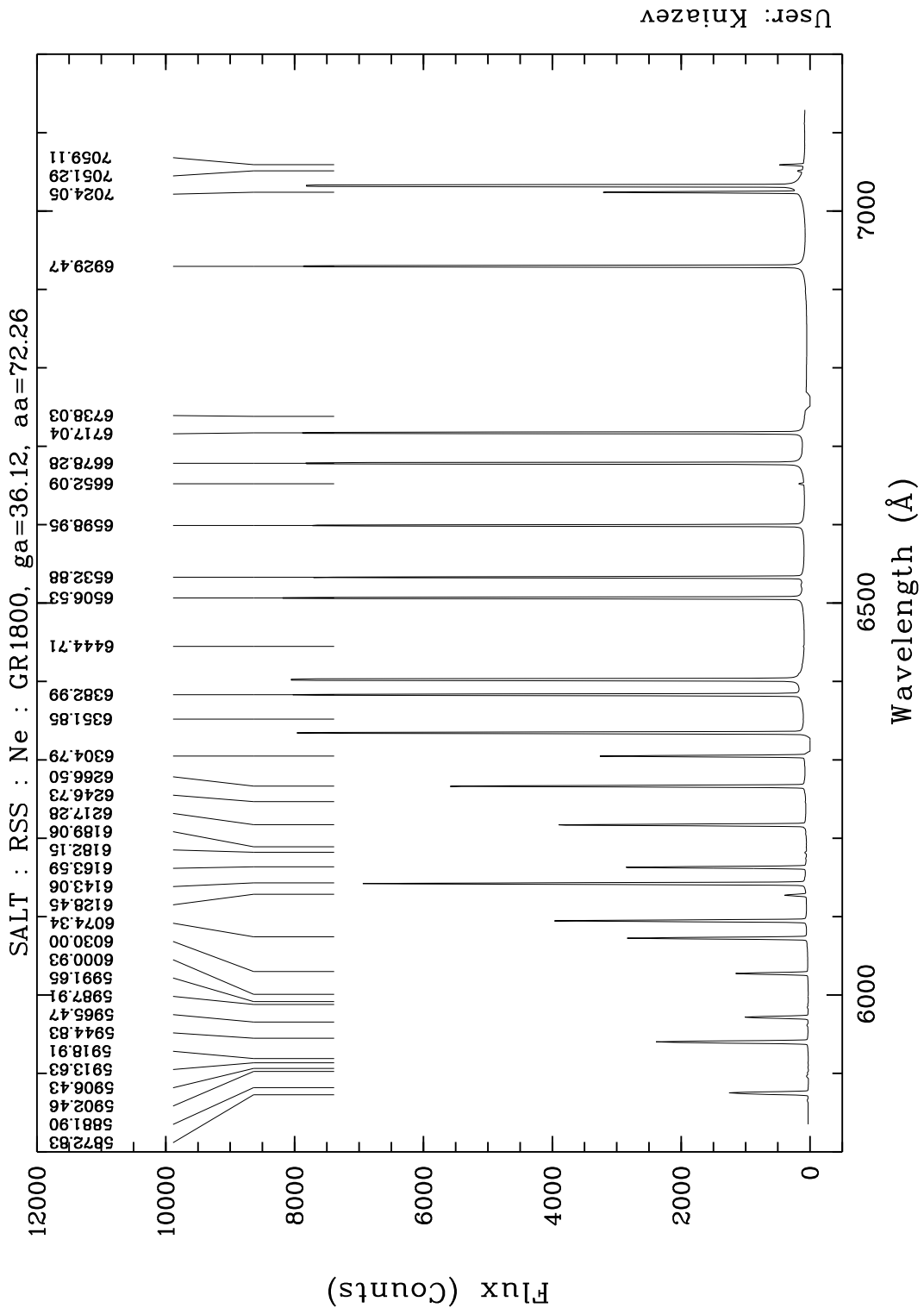


Figure 5: Grating GR1800 with Grating angle 36.125 and Articulation angle 72.26. Covered spectral range is 5865-7164 Å.



5 Reference spectrum for ThAr

5.1 Total Spectral Range

See Figure 6 for spectrum covered spectral range 3500–6600 Å.

See Figure 7 for spectrum covered spectral range 6000–9000 Å.

5.2 Spectra with Higher Resolution

See Figure 8 for spectrum covered spectral range 5865–7164 Å.

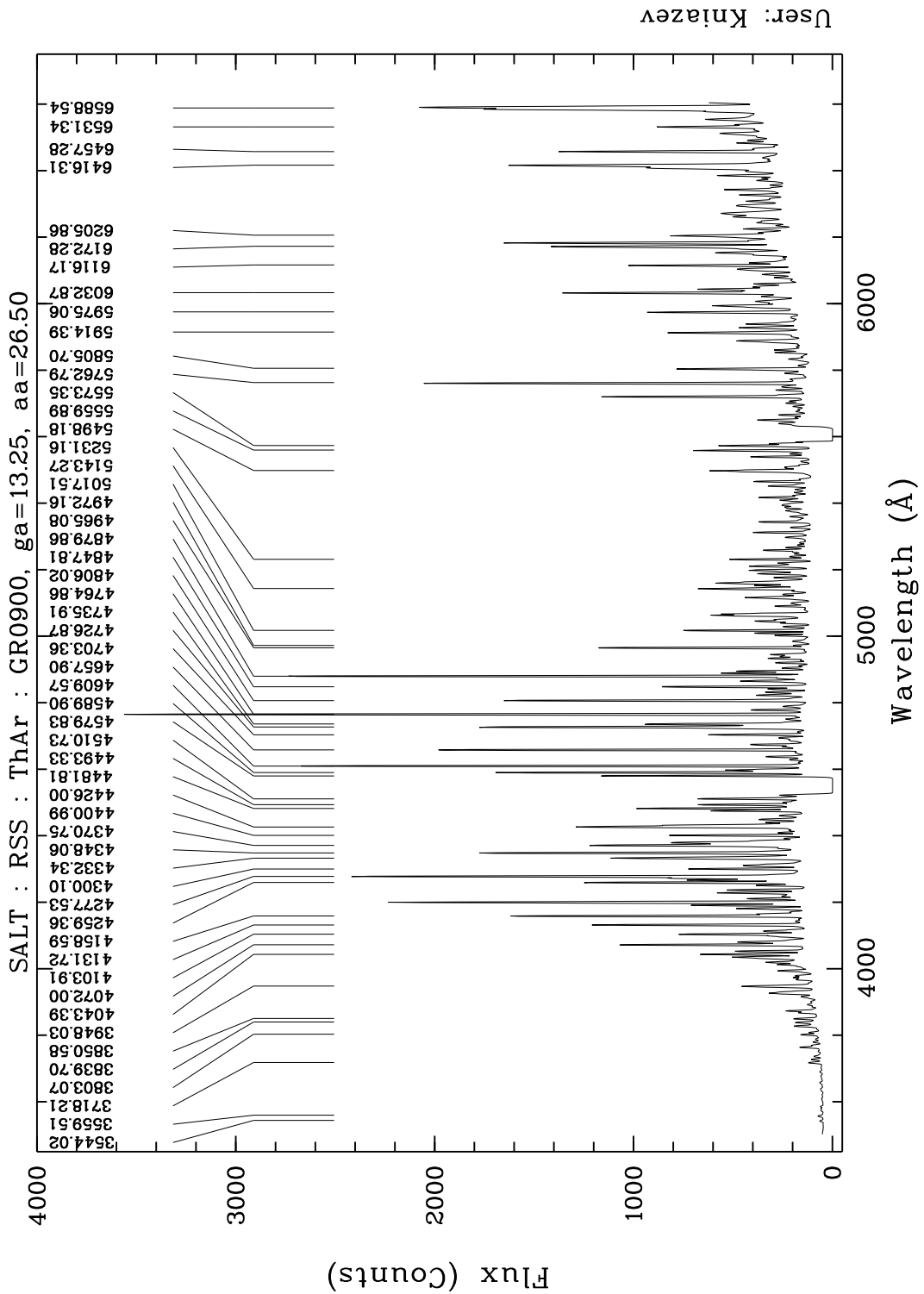


Figure 6: Grating GR900 with Grating angle 13.25 and Articulation angle 26.50. Covered spectral range is 3500–6600 Å.

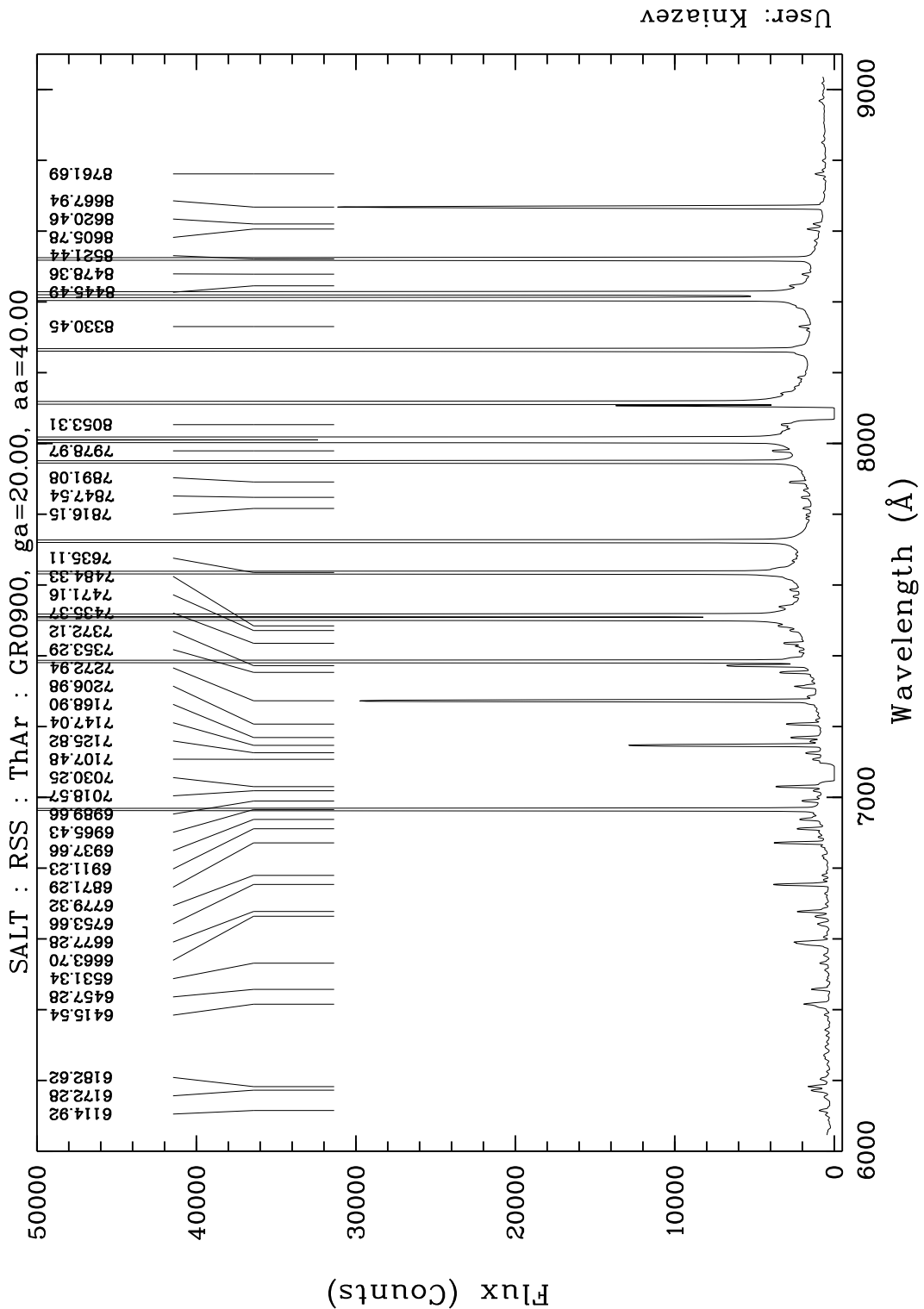


Figure 7: Grating GR900 with Grating angle 20.00 and Articulation angle 40.00. Covered spectral range is 6000–9000 Å.

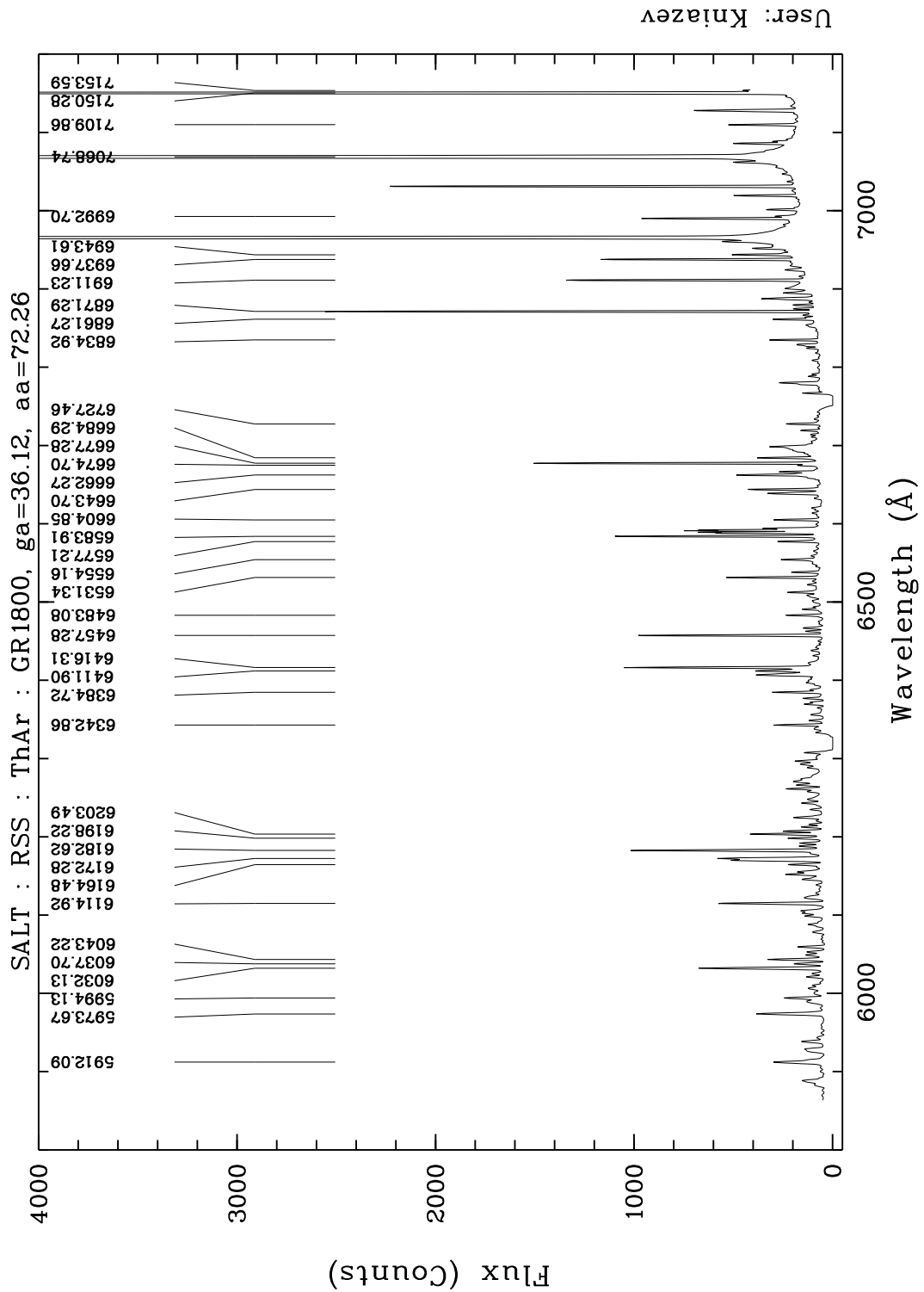


Figure 8: Grating GR1800 with Grating angle 36.125 and Articulation angle 72.26. Covered spectral range is 5865–7164 Å.



6 Reference spectrum for Xe

6.1 Total Spectral Range

See Figure 9 for spectrum covered spectral range 3500–6600 Å.

6.2 Spectra with Higher Resolution

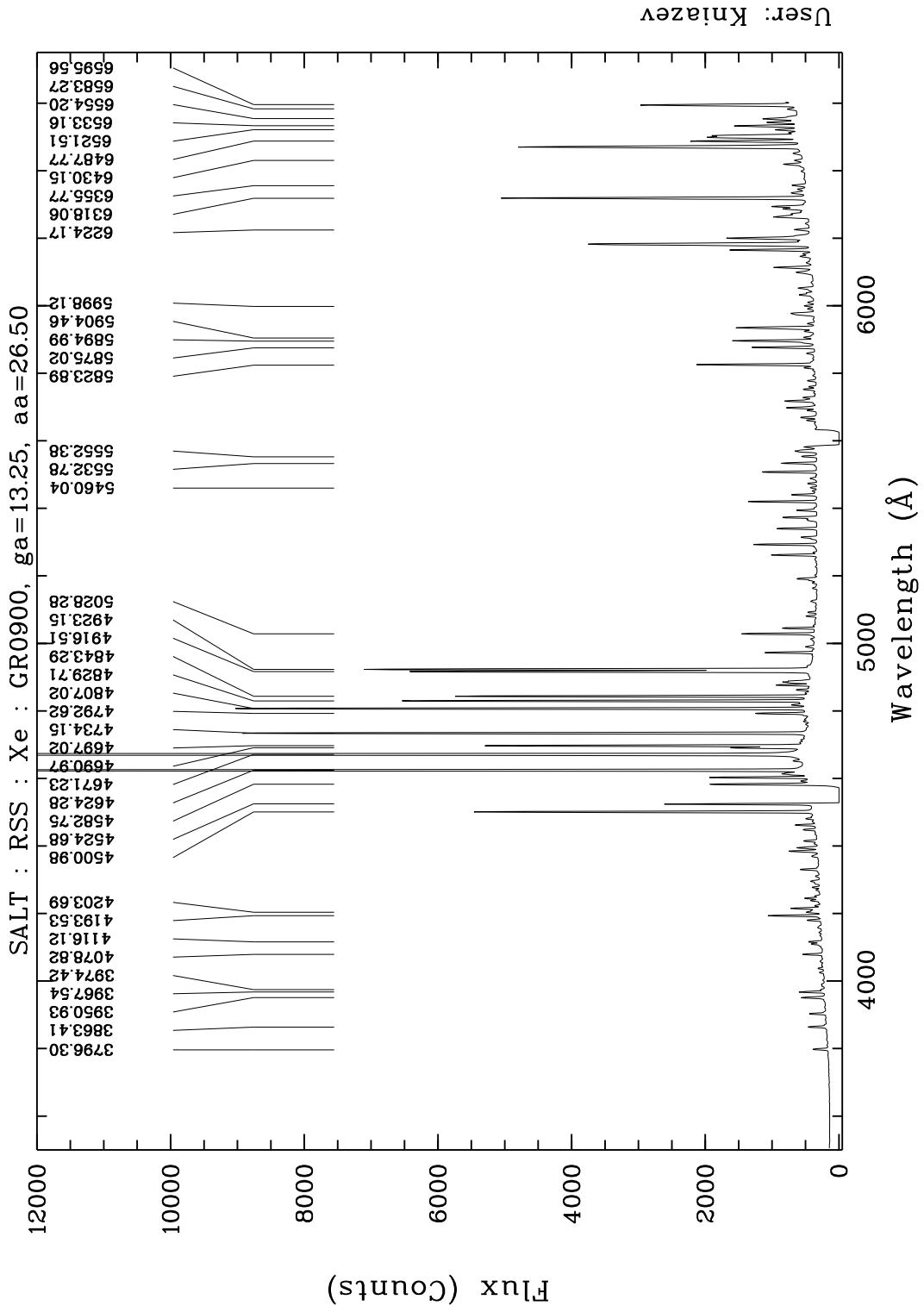


Figure 9: Grating GR900 with Grating angle 13.25 and Articulation angle 26.50. Covered spectral range is 3500–6600 Å.