The VO-Compatible period Analysis Program Period04

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IVOA Interoperability meeting Apps Session,
STScI Baltimore, 30-th October 2008

What is Period04

Original package Period98 (M Sperl)

Well and widely used by astronomers

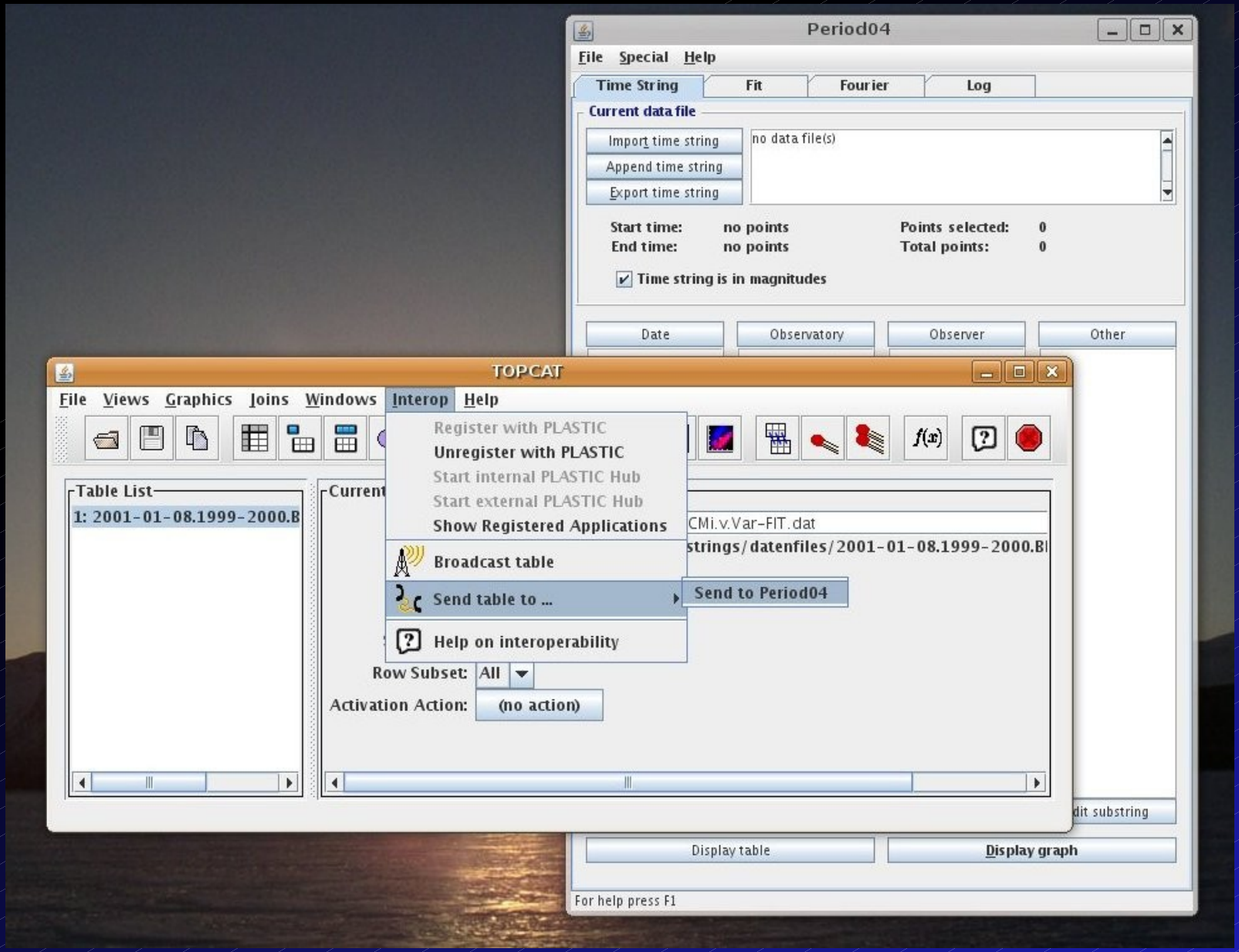
rework of old program in F77 in Java

new GUI

Period analysis with gaps – non FFT based

Using Fourier techniques

Can handle the change of period



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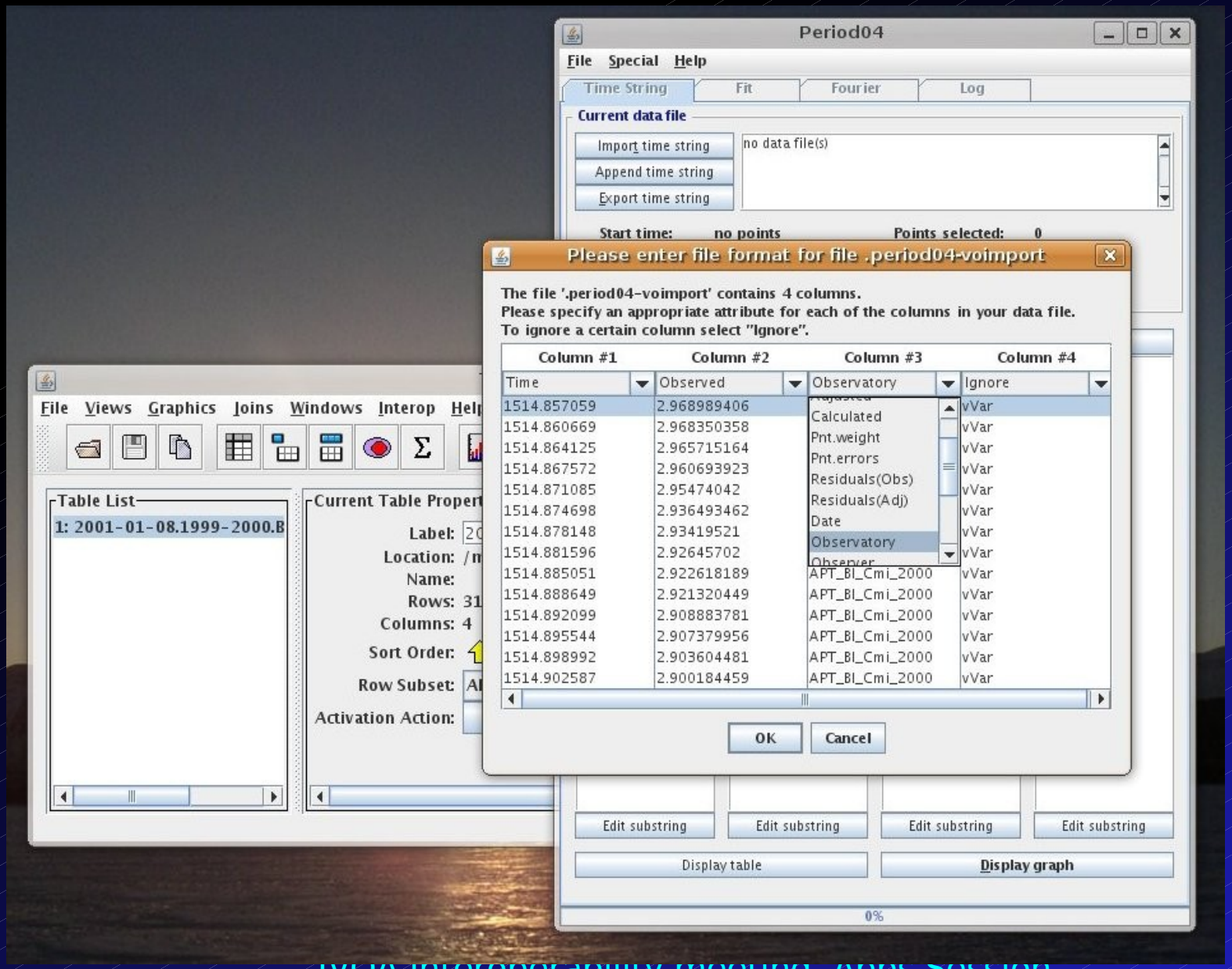

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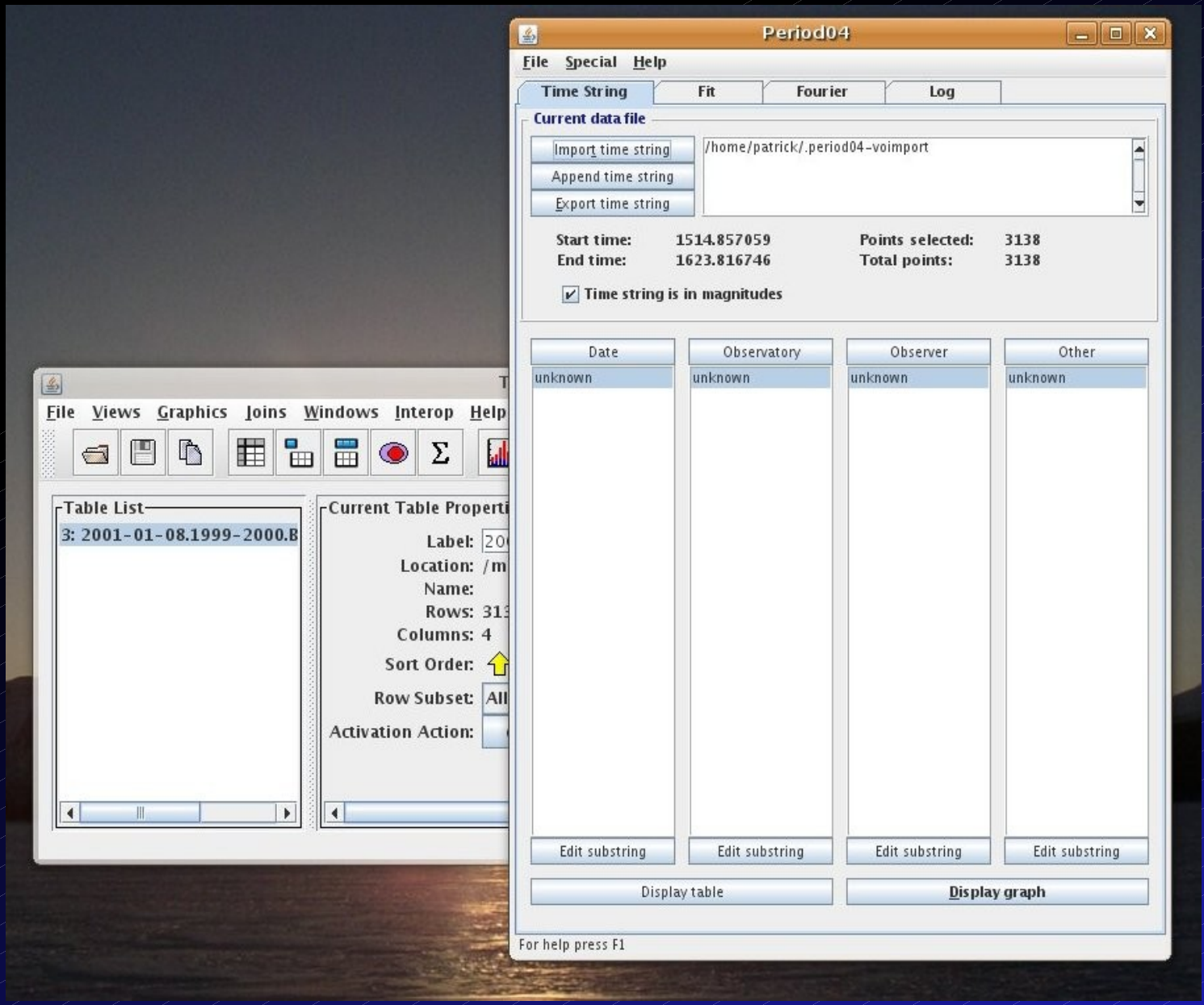

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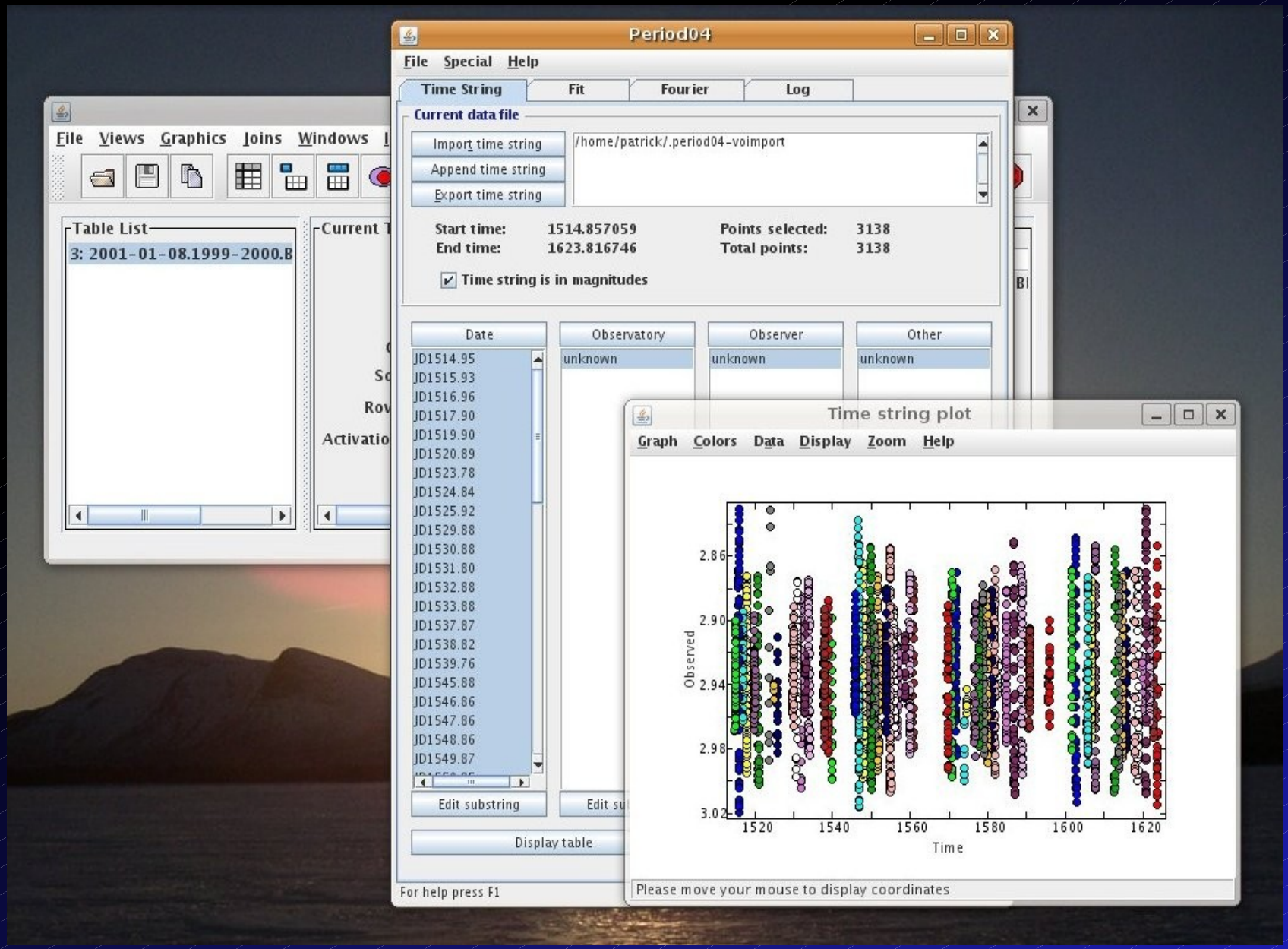

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Period04

File Special Help

Time String | Fit | Fourier | Log

Fourier Calculation Settings

Title: First Frequency

From: 0 Step rate: High 0.000458885312

To: 139 Nyquist: 139.806

Use Weights: none Edit weight settings

Calculations based on:

(•) Original data ( ) Residuals at original ( ) Spectral window

( ) Adjusted data ( ) Residuals at adjusted

Compact mode: ( ) Peaks only (•) All

Highest Peak at: Frequency = 8.24525129 Amplitude = 0.0349032041

Calculate

Spectral Window (F=0, A=1)

First Frequency (F=8.24525129, A=0.0349032041)

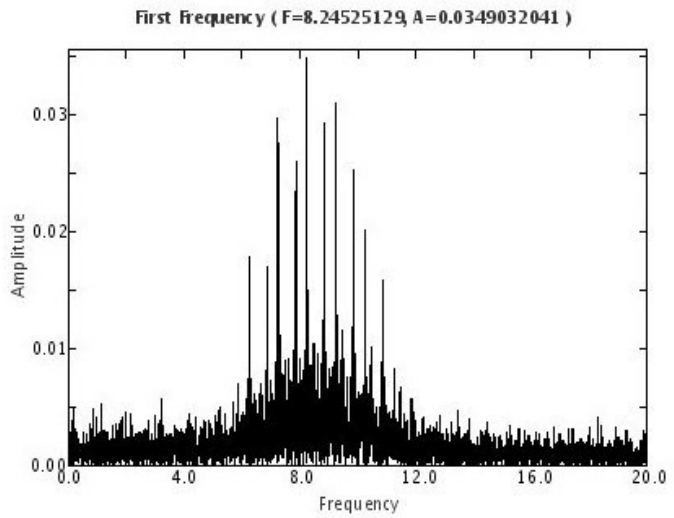
Rename spectrum | Export spectrum | Delete spectrum

Display table | Display graph

For help press F1

Fourier Graph: First Frequency

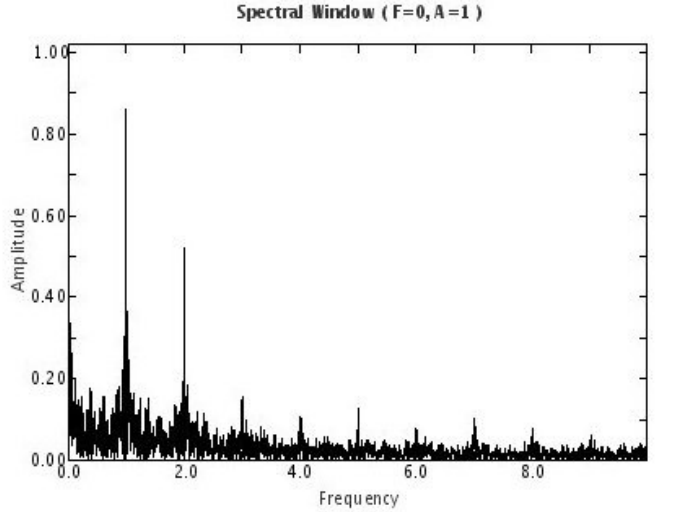
Graph Display Zoom Help



Please move your mouse to display coordinates

Fourier Graph: Spectral Window

Graph Display Zoom Help



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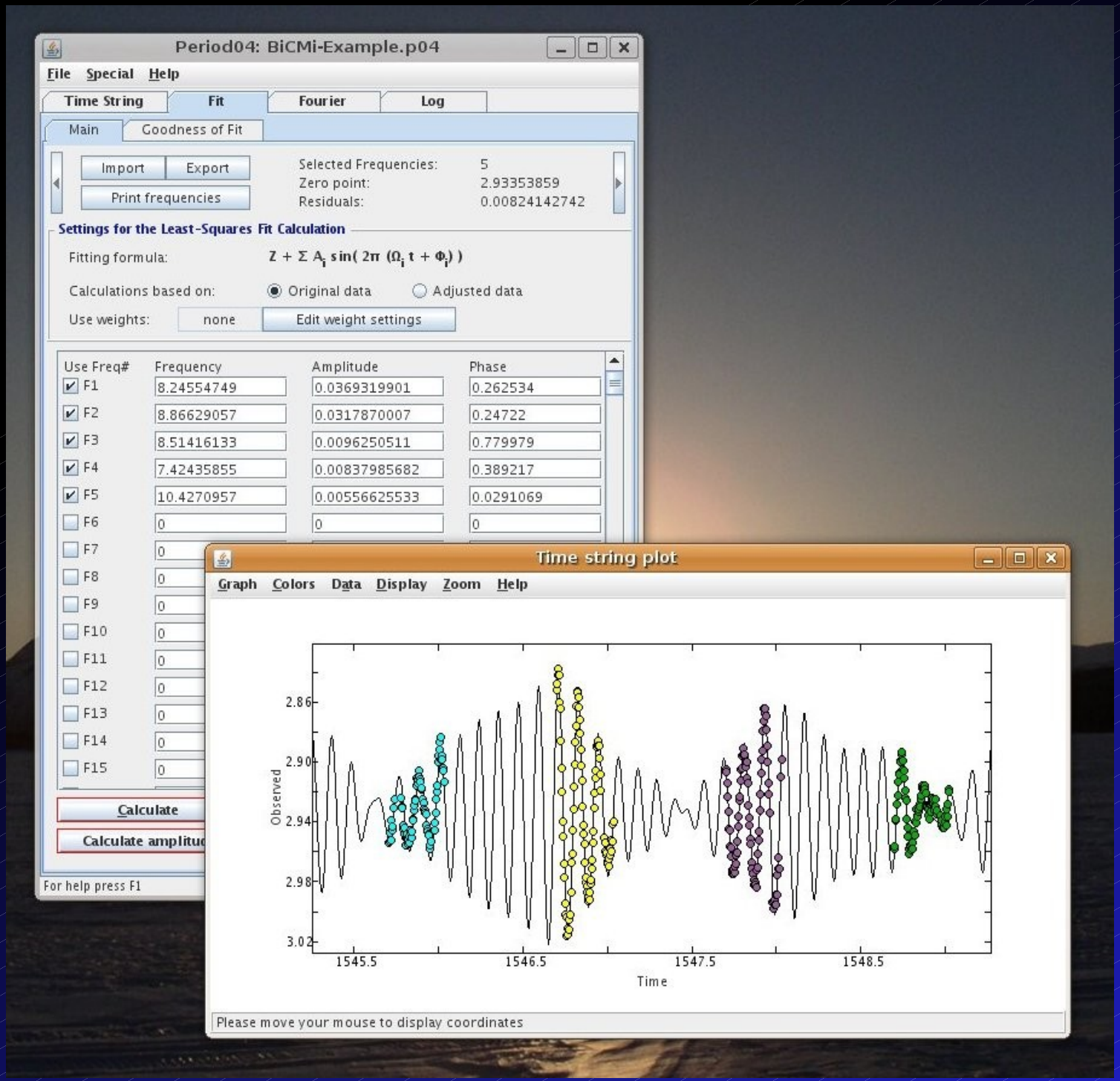
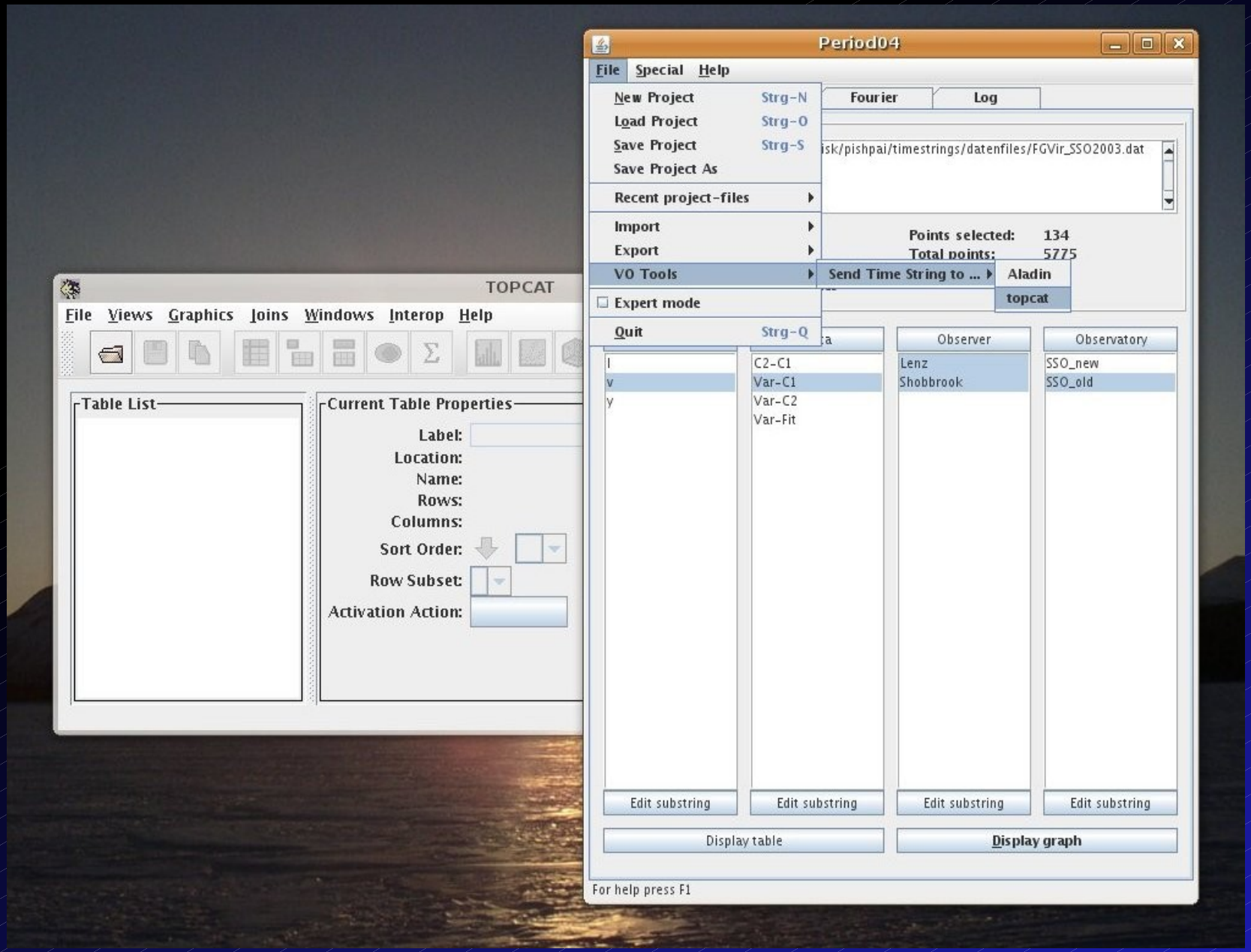

Period04: BiCMi-Example.p04
File Special Help
Time String Fit Fourier Log
Main Goodness of Fit
Import Export
Print frequencies
Selected Frequencies: 5
Zero point: 2.93353859
Residuals: 0.00824142742
Settings for the Least-Squares Fit Calculation
Fitting formula: Z + Σ A_i sin(2π (Ω_i t + Φ_i))
Calculations based on: Original data Adjusted data
Use weights: none Edit weight settings
Use Freq# Frequency Amplitude Phase
F1 8.24554749 0.0369319901 0.262534
F2 8.86629057 0.0317870007 0.24722
F3 8.51416133 0.0096250511 0.779979
F4 7.42435855 0.00837985682 0.389217
F5 10.4270957 0.00556625533 0.0291069
F6 0 0 0
F7 0
F8 0
F9 0
F10 0
F11 0
F12 0
F13 0
F14 0
F15 0
Calculate
Calculate amplitud
For help press F1
Time string plot
Graph Colors Data Display Zoom Help
Observed
2.86
2.90
2.94
2.98
3.02
1545.5
1546.5
1547.5
1548.5
Time
Please move your mouse to display coordinates



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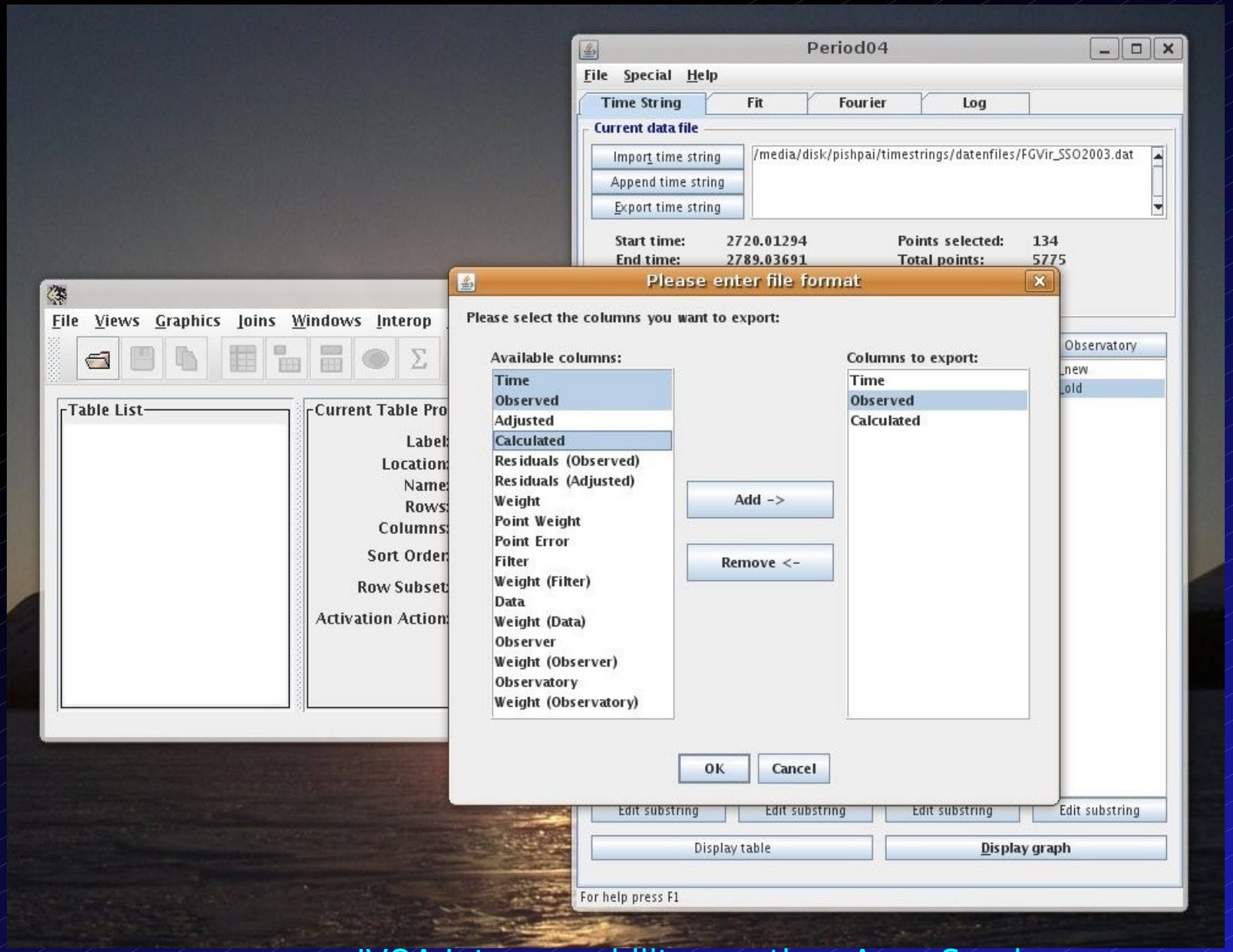

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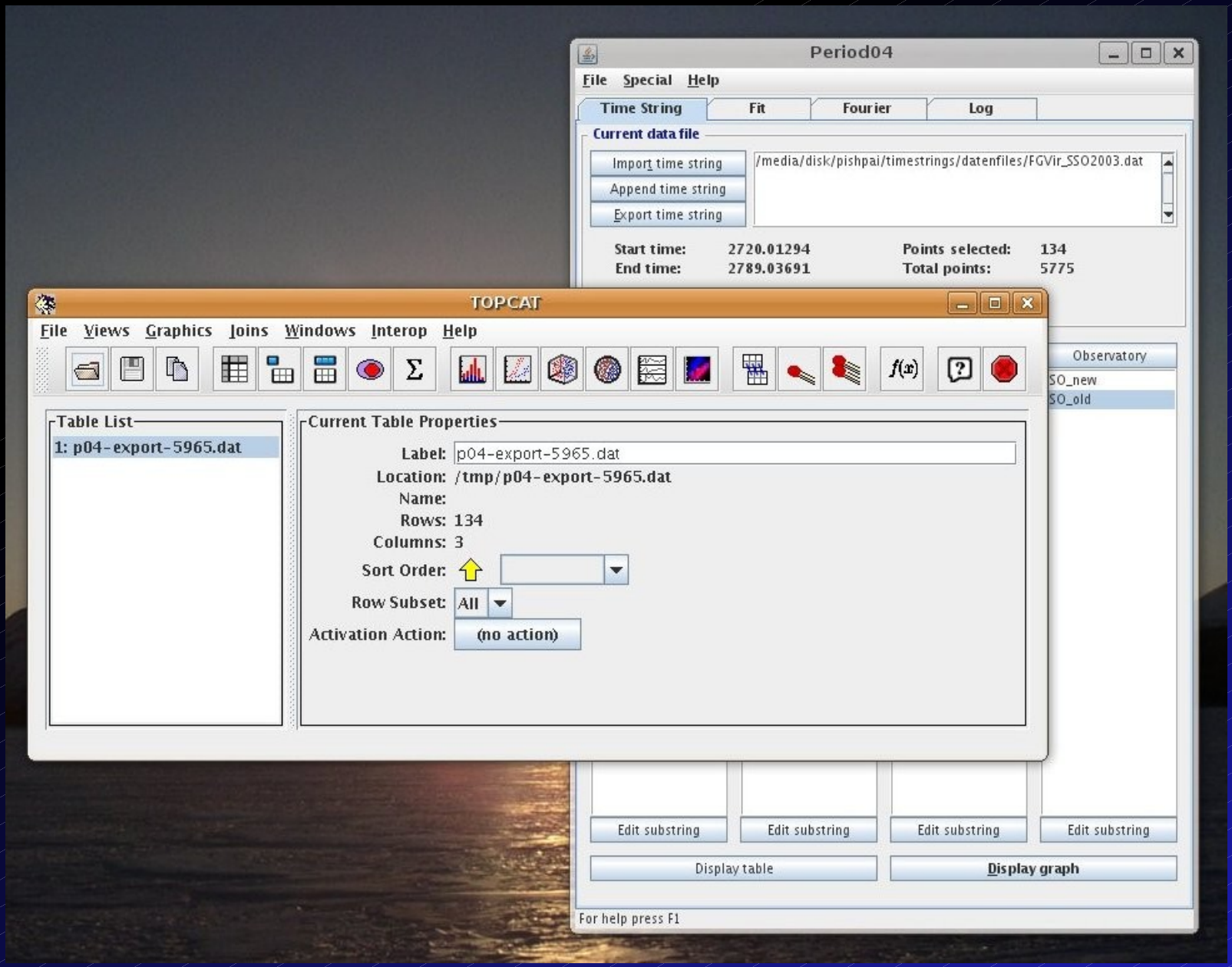

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Conclusions

The period analysis tools with VO capability !

Very flexible – non FFT

In Java but part in C++ - math

Will be SAMP in near future