



AHELP for CIAO 3.4

## models

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## Synopsis

Summary of Available Models

## Description

The following is the list of models available within Sherpa. The last column in the table indicates whether the model is integrated when fit to binned data; "ON" indicates that the model is integrated by default. See the documentation on the INTEGRATE command for further information about source model integration.

### Summary of Sherpa Models:

<sherpa_modelname>	Description	Integration
ATTEN	Attenuation by ISM	OFF
{BBODY   BB}	Blackbody as a function of energy	ON
BBODYFREQ	Blackbody as a function of frequency	ON
BETA1D	1-D surface brightness beta-model	OFF
{BETA2D   LORPOW2D}	2-D Lorentzian with varying power law	OFF
BOX1D	1-D box function	OFF
BOX2D	2-D box function	OFF
BPL1D	Broken power law function	ON
{CONST1D   CONST}	1-D constant amplitude model	ON
CONST2D	2-D constant amplitude model	ON
COS	Cosine function	OFF
DELTA1D	1-D delta function	ON
DELTA2D	2-D delta function	ON
DEVAUCOULEURS	DeVaucouleurs profile	OFF
DERED	Dereddening function	OFF
EDGE	Photoabsorption edge model	OFF
{FARF1D   FARF}	A 1-D file-based ancillary response model	N/A
{FARF2D   FEXPMAP	A 2-D file-based ancillary response model	N/A

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FEXPMAP2D}		
FPSF1D	A 1–D file–based PSF instrument model	N/A
{FPSF2D   FPSF   PSFFROMFILE}	A 2–D file–based PSF instrument model	N/A
{FRMF1D   FRMF}	A 1–D file–based response matrix model	N/A
{GAUSS1D   GAUSS}	1–D unnormalized Gaussian function	ON
GAUSS2D	2–D unnormalized Gaussian function	OFF
GRIDMODEL	N–D user–specified amplitude model	OFF
{HIGHPASS   STEPHI1D}	1–D step function	OFF
{HUBBLE   REYNOLDS}	Hubble–Reynolds profile	OFF
JDPILEUP	John Davis (MIT) pileup model	OFF
{LORENTZ1D   LORENTZ}	1–D normalized Lorentzian function	ON
LORENTZ2D	2–D unnormalized Lorentzian function	OFF
{LORPOW2D   BETA2D}	2–D Lorentzian with varying power law	OFF
{LOWPASS   STEPLO1D}	1–D step function	OFF
NBETA	1–D normalized beta function	ON
NGAUSS1D	1–D normalized Gaussian function	ON
POISSON	Poisson function	OFF
{POLYNOM1D   POLY}	1–D polynomial function	ON
POLYNOM2D	2–D polynomial function	ON
{POW   POWLAW   POWLAW1D}	1–D power law	ON
PTSRC1D	A 1–D file–based point–source fitting model	OFF
{PTSRC2D   PTSRC}	A 2–D file–based point–source fitting model	OFF
{REYNOLDS   HUBBLE}	Hubble–Reynolds profiles	OFF
{RSP1D   RSP}	A 1–D instrument model	N/A
RSP2D	A 2–D instrument model utilizing an exposure map and point–spread function	N/A
SCHECHTER	Schechter function	OFF
SHEXP10	Exponential function, base 10	OFF
SHEXP	Exponential function	OFF
SHLOG10	Logarithm function, base 10	OFF
{SHLOGE   SHLOG}	Natural logarithm function	OFF
SIN	Sine function	OFF
SQRT	Square root function	OFF
{STEPHI1D   HIGHPASS}	1–D step function	OFF
{STEPLO1D   LOWPASS}	1–D step function	OFF
TAN	Tangent function	OFF
TPSF1D	A 1–D TCD–model–based PSF instrument model	N/A
{TPSF2D   TPSF   PSFFROMTCD   PSF}	A 2–D TCD–model–based PSF instrument model	N/A
USERMODEL	User implemented model	OFF
XS<xspecname>	An XSPEC model function	N/A

See "ahelp xs" for a list of XSPEC models available within Sherpa.

## Bugs

See the [Sherpa bug pages](#) online for an up-to-date listing of known bugs.

## See Also

### *sherpa*

[atten](#), [bbody](#), [bbodyfreq](#), [beta1d](#), [beta2d](#), [box1d](#), [box2d](#), [bpl1d](#), [const1d](#), [const2d](#), [cos](#), [delta1d](#), [delta2d](#), [dered](#), [devaucouleurs](#), [edge](#), [erf](#), [erfc](#), [farf](#), [farf2d](#), [fpsf](#), [fpsf1d](#), [frmf](#), [gauss1d](#), [gauss2d](#), [gridmodel](#), [hubble](#), [jdpileup](#), [linebroad](#), [lorentz1d](#), [lorentz2d](#), [nbeta](#), [ngauss1d](#), [poisson](#), [polynom1d](#), [polynom2d](#), [powlaw1d](#), [ptsrc1d](#), [ptsrc2d](#), [rsp](#), [rsp2d](#), [schechter](#), [shexp](#), [shexp10](#), [shlog10](#), [shloge](#), [sin](#), [sqrt](#), [stephi1d](#), [steplo1d](#), [tan](#), [tpsf](#), [tpsf1d](#), [usermodel](#), [xs](#), [xsabsori](#), [xsacisabs](#), [xsapec](#), [xbapec](#), [xsbbody](#), [xsbbodyrad](#), [xsbextrav](#), [xsbextriv](#), [xsbknpower](#), [xsbmc](#), [xsbremss](#), [xsbvapec](#), [xsc6mekl](#), [xsc6pmekl](#), [xsc6pvmkl](#), [xsc6vmekl](#), [xscabs](#), [xscemekl](#), [xscevml](#), [xscflow](#), [xscompbb](#), [xscompls](#), [xscompst](#), [xscomptt](#), [xsconstant](#), [xscutoffpl](#), [xscyclabs](#), [xsdisk](#), [xsdiskbb](#), [xsdiskline](#), [xsdiskm](#), [xsdisko](#), [xsdiskpn](#), [xsdust](#), [xsedge](#), [xsequil](#), [xsexpabs](#), [xsexpdec](#), [xsexpfac](#), [xsgabs](#), [xsgaussian](#), [xsgnei](#), [xsgrad](#), [xsgrbm](#), [xshighecut](#), [xshrefl](#), [xslaor](#), [xslorentz](#), [xsmeka](#), [xsmekal](#), [xsmkcfllow](#), [xsnei](#), [xsnotch](#), [xsnpshock](#), [xsnsa](#), [xsnteea](#), [xspcfabs](#), [xspcgpwrlw](#), [xspexrav](#), [xspextriv](#), [xsphabs](#), [xsplabs](#), [xspicabs](#), [xsposm](#), [xspowerlaw](#), [xspshock](#), [xspwab](#), [xsraymond](#), [xsredder](#), [xsredge](#), [xsrefsch](#), [xsredov](#), [xssmedge](#), [xsspline](#), [xssrcut](#), [xssresc](#), [xssssice](#), [xsstep](#), [xstbabs](#), [xstbgrain](#), [xstbvarabs](#), [xsuvred](#), [xsvapec](#), [xsvarabs](#), [xsvbremss](#), [xsvequil](#), [xsvgnei](#), [xsvmcfllow](#), [xsvmeka](#), [xsvmekal](#), [xsvnei](#), [xsvnpshock](#), [xsvphabs](#), [xsvpshock](#), [xsvraymond](#), [xsvsedov](#), [xswabs](#), [xswndabs](#), [xsxion](#), [xszbbody](#), [xszbremss](#), [xszedge](#), [xszgauss](#), [xszhighcut](#), [xszpcfabs](#), [xszphabs](#), [xszpowerlw](#), [xsztbabs](#), [xszvarabs](#), [xszvfeabs](#), [xszvphabs](#), [xszwabs](#), [xszwndabs](#)

### *slang*

[usermodel](#)

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URL:  
<http://cxc.harvard.edu/ciao3.4/models.html>  
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