

ADAS Subroutine gbf

```
FUNCTION GBF (EN, U)
  IMPLICIT REAL*8 (A-H, O-Z)
```

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C ***** FORTRAN77 FUNCTION: GBF *****

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C PURPOSE Calculate bound-free gaunt factor as given by Eqn. 34 in
C Burgess and Summers, MNRAS, vol 226, p257-272 (1987).

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C UNIX-IDL PORT:

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C VERSION: 1.1 DATE: 16-01-96

C MODIFIED: TIM HAMMOND (TESSELLA SUPPORT SERVICES PLC)

C

- FIRST VERSION

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C VERSION: 1.2 DATE: 13-10-99

C MODIFIED: Martin O'Mullane

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- Annotated routine

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- Put in double precision constants.

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- Corrected T2 correction factor for an erroneous 25/18

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to 28/18 as in the paper.

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      X= (EN*(U+1.0D0))**0.6666667D0
      T1=0.1728D0*(U-1.0D0)/X
      T2=1.5555556D0*T1*T1+1.333333D0*(0.0496D0*
&      (U*U+1.333333D0*U+1.0D0))/(X*X)
      GBF=1.0D0/(1.0D0-1.333333D0*T1+T2)**0.75D0
      RETURN
      END
      REAL*8          EN,          U
```