

/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 1

```
001 !Module to read in name/value
002 !Should correctly interpret FI
003 !Antony Lewis (http://cosmolog
004 !Apr 11, added support for INC
005 !Jun 12, added support for DEF
006
007 module IniFile
008   implicit none
009   public
010
011   integer, parameter :: Ini_ma
012
013   integer, parameter :: Ini_ma
014   logical :: Ini_fail_on_not_f
015
016   logical :: Ini_Echo_Read = .
017
018   logical :: Ini_AllowDuplicat
019
020   type TNameValue
021     !no known way to make chara
022     character(Ini_max_name_len
023     character(Ini_max_string_l
024   end type TNameValue
025
026   type TNameValue_pointer
027     Type(TNameValue), pointer
028   end type TNameValue_pointer
029
030   Type TNameValueList
```

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```
001 !Module to read in name/va
002 !Should correctly interpre
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004 !Apr 11, added support for
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006
007 module IniFile
008   implicit none
009   public
010
011   integer, parameter :: Ini_
012
013   integer, parameter :: Ini_
014   logical :: Ini_fail_on_not
015
016   logical :: Ini_Echo_Read =
017
018   logical :: Ini_AllowDuplic
019
020   type TNameValue
021     !no known way to make
022     character(Ini_max_name
023     character(Ini_max_stri
024   end type TNameValue
025
026   type TNameValue_pointer
027     Type(TNameValue), poin
028   end type TNameValue_pointe
029
030   Type TNameValueList
```

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```
031      integer Count
032      integer Delta
033      integer Capacity
034      logical ignoreDuplicates
035      type(TNameValue_pointer),
036      end Type TNameValueList
037
038      Type TIniFile
039      logical SlashComments
040      Type (TNameValueList) :: L,
041      end Type TIniFile
042
043      Type(TIniFile) :: DefIni
044
045      contains
046
047      subroutine TNameValueList_I
048      Type (TNameValueList) :: L
049      logical, intent(in), optio
050
051      L%Count = 0
052      L%Capacity = 0
053      L%Delta = 128
054      L%ignoreDuplicates = .fal
055      if (present(ignoreDuplica
056      nullify(L%Items)
057
058      end subroutine TNameValueLi
059
060      subroutine TNameValueList_C
```

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```
031      integer Count
032      integer Delta
033      integer Capacity
034      logical ignoreDuplicat
035      type(TNameValue_pointe
036      end Type TNameValueList
037
038      Type TIniFile
039      logical SlashComments
040      Type (TNameValueList)
041      end Type TIniFile
042
043      Type(TIniFile) :: DefIni
044
045      contains
046
047      subroutine TNameValueList_
048      Type (TNameValueList) :: L
049      logical, intent(in), optio
050
051      L%Count = 0
052      L%Capacity = 0
053      L%Delta = 128
054      L%ignoreDuplicates = .fals
055      if (present(ignoreDuplicat
056      nullify(L%Items)
057
058      end subroutine TNameValueL
059
060      subroutine TNameValueList_
```

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```
061      Type (TNameValueList) :: L
062      integer i, status
063
064      do i=L%count,1,-1
065          deallocate (L%Items(i)%P,
066      end do
067      deallocate (L%Items, stat
068      call TNameValueList_Init(L
069
070  end subroutine TNameValueLi
071
072  subroutine TNameValueList_V
073      Type (TNameValueList), in
074      character(LEN=*), intent(
075      CHARACTER(LEN=*), intent(
076      integer i
077
078      do i=1, L%Count
079          if (L%Items(i)%P%Name =
080              AValue = L%Items(i)%
081              return
082          end if
083      end do
084      AValue = ''
085
086  end subroutine TNameValueLi
087
088
089  function TNameValueList_In
090      Type (TNameValueList), in
```

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```
061      Type (TNameValueList) :: L
062      integer i, status
063
064      do i=L%count,1,-1
065          deallocate (L%Items(i)
066      end do
067      deallocate (L%Items, stat
068      call TNameValueList_Init(L
069
070  end subroutine TNameValueL
071
072  subroutine TNameValueList_
073      Type (TNameValueList), int
074      character(LEN=*), intent(i
075      CHARACTER(LEN=*), intent(o
076      integer i
077
078      do i=1, L%Count
079          if (L%Items(i)%P%Name
080              AValue = L%Items(i
081              return
082          end if
083      end do
084      AValue = ''
085
086  end subroutine TNameValueL
087
088
089  function TNameValueList_In
090      Type (TNameValueList), int
```

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```
091      character(LEN=*), intent(  
092      integer :: AValue  
093      integer i  
094  
095      do i=1, L%Count  
096          if (L%Items(i)%P%Name =  
097              AValue = i  
098              return  
099          end if  
100      end do  
101      AValue = -1  
102  
103  end function TNameValueList  
104  
105  function TNameValueList_Has  
106      Type (TNameValueList), in  
107      character(LEN=*), intent(  
108      logical :: AValue  
109  
110      AValue = TNameValueList_I  
111  
112  end function TNameValueList  
113  
114  subroutine TNameValueList_A  
115      Type (TNameValueList) :: L  
116      character(LEN=*), intent(i  
117      logical, optional, intent(  
118      logical isDefault  
119  
120      if (present(only_if_undefi
```

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```
091      character(LEN=*), intent(i  
092      integer :: AValue  
093      integer i  
094  
095      do i=1, L%Count  
096          if (L%Items(i)%P%Name  
097              AValue = i  
098              return  
099          end if  
100      end do  
101      AValue = -1  
102  
103  end function TNameValueLis  
104  
105  function TNameValueList_Ha  
106      Type (TNameValueList), int  
107      character(LEN=*), intent(i  
108      logical :: AValue  
109  
110      AValue = TNameValueList_In  
111  
112  end function TNameValueLis  
113  
114  subroutine TNameValueList_  
115      Type (TNameValueList) :: L  
116      character(LEN=*), intent(i  
117      logical, optional, intent(  
118      logical isDefault  
119  
120      if (present(only_if_undefi
```

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```
121      isDefault = only_if_undef
122      else
123      isDefault = .true.
124      end if
125      if ((.not. Ini_AllowDuplic
126      if (L%ignoreDuplicates .
127      write (*,*) 'IniFile,TNa
128      stop
129      end if
130      if (L%Count == L%Capacity)
131      L%Count = L%Count + 1
132      allocate(L%Items(L%Count)%
133      L%Items(L%Count)%P%Name =
134      L%Items(L%Count)%P%Value =
135
136      end subroutine TNameValueLi
137
138      subroutine TNameValueList_S
139      Type (TNameValueList) :: L
140      integer C
141      type(TNameValue_pointer),
142
143      if (L%Count > 0) then
144      if (C < L%Count) stop 'T
145      allocate(TmpItems(L%Coun
146      TmpItems = L%Items(1:L%C
147      deallocate(L%Items)
148      allocate(L%Items(C))
149      L%Items(1:L%Count) = Tmp
150      deallocate(TmpItems)
```

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```
121      isDefault = only_if_un
122      else
123      isDefault = .true.
124      end if
125      if ((.not. Ini_AllowDuplic
126      if (L%ignoreDuplicates
127      write (*,*) 'IniFile,T
128      stop
129      end if
130      if (L%Count == L%Capacity)
131      L%Count = L%Count + 1
132      allocate(L%Items(L%Count)%
133      L%Items(L%Count)%P%Name =
134      L%Items(L%Count)%P%Value =
135
136      end subroutine TNameValueL
137
138      subroutine TNameValueList_
139      Type (TNameValueList) :: L
140      integer C
141      type(TNameValue_pointer),
142
143      if (L%Count > 0) then
144      if (C < L%Count) stop
145      allocate(TmpItems(L%Co
146      TmpItems = L%Items(1:L
147      deallocate(L%Items)
148      allocate(L%Items(C))
149      L%Items(1:L%Count) = T
150      deallocate(TmpItems)
```



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```
151      else
152          allocate(L%Items(C))
153      end if
154      L%Capacity = C
155
156  end subroutine TNameValueLi
157
158  subroutine TNameValueList_D
159      Type (TNameValueList) :: L
160      integer, intent(in) :: i
161
162      deallocate(L%Items(i)%P)
163      if (L%Count > 1) L%Items(
164          L%Count = L%Count - 1
165
166  end subroutine TNameValueLi
167
168  subroutine Ini_NameValue_Add
169      Type(TIniFile) :: Ini
170      character (LEN=*), intent(
171          integer EqPos, slashpos, l
172          logical, optional, intent(
173          logical isDefault
174          character (LEN=len(AInLine
175
176      if (present(only_if_undef
177          isDefault = only_if_unde
178      else
179          isDefault = .false.
180      end if
```

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```
151      else
152          allocate(L%Items(C))
153      end if
154      L%Capacity = C
155
156  end subroutine TNameValueL
157
158  subroutine TNameValueList_
159      Type (TNameValueList) :: L
160      integer, intent(in) :: i
161
162      deallocate(L%Items(i)%P)
163      if (L%Count > 1) L%Items(i
164          L%Count = L%Count - 1
165
166  end subroutine TNameValueL
167
168  subroutine Ini_NameValue_A
169      Type(TIniFile) :: Ini
170      character (LEN=*), intent(
171          integer EqPos, slashpos, l
172          logical, optional, intent(
173          logical isDefault
174          character (LEN=len(AInLine
175
176      if (present(only_if_undefi
177          isDefault = only_if_un
178      else
179          isDefault = .false.
180      end if
```

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ile.f90, Top line: 181

```
181      InLine=trim(adjustl(AInL
182      EqPos = scan(InLine, '=')
183      if (EqPos/=0 .and. InLin
184
185          AName = trim(InLine(1
186
187          S = adjustl(InLine(Eq
188              if (Ini%SlashCommen
189                  slashpos=scan(S, '/'
190                  if (slashpos /= 0)
191                      S = S(1:slashpo
192              end if
193          end if
194          lastpos=len_trim(S)
195          if (lastpos>1) then
196              if (S(1:1)==' ' .an
197                  S = S(2:lastpos-1)
198              end if
199          end if
200          call TNameValueList_A
201
202      end if
203
204  end subroutine Ini_NameValue
205
206  subroutine Ini_Open(filename
207      character (LEN=*), intent
208      integer, intent(IN) :: un
209      logical, optional, intent
210      logical, optional, intent
```

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```
181      InLine=trim(adjustl(AInLin
182      EqPos = scan(InLine, '=')
183      if (EqPos/=0 .and. InLine(
184
185          AName = trim(InLine(1:
186
187          S = adjustl(InLine(EqP
188              if (Ini%SlashComments)
189                  slashpos=scan(S, '/'
190                  if (slashpos /= 0)
191                      S = S(1:slash
192              end if
193          end if
194          lastpos=len_trim(S)
195          if (lastpos>1) then
196              if (S(1:1)==' ' .
197                  S = S(2:lastpo
198              end if
199          end if
200          call TNameValueList_Ad
201
202      end if
203
204  end subroutine Ini_NameVal
205
206  subroutine Ini_Open(filena
207      character (LEN=*), intent(
208      integer, intent(IN) :: uni
209      logical, optional, intent(
210      logical, optional, intent(
```

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```
211 logical aerror
212
213 call TNameValueList_Init(
214 call TNameValueList_Init(
215
216 if (present(slash_comment
217 call Ini_Open_File(DefIn
218 else
219 call Ini_Open_File(DefIn
220 end if
221
222 if (present(error)) then
223 error = aerror
224 else
225 if (aerror) then
226 write (*,*) 'Ini_Open:
227 stop
228 end if
229 end if
230
231 end subroutine Ini_Open
232
233 function Ini_ExtractFilePath
234 character(LEN=*), intent(I
235 character(LEN=Ini_max_stri
236 integer len, i
237
238 len = len_trim(aname)
239 do i = len, 1, -1
240 if (aname(i:i)=='/') th
```

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```
211 logical aerror
212
213 call TNameValueList_Init(D
214 call TNameValueList_Init(D
215
216 if (present(slash_comments
217 call Ini_Open_File(Def
218 else
219 call Ini_Open_File(Def
220 end if
221
222 if (present(error)) then
223 error = aerror
224 else
225 if (aerror) then
226 write (*,*) 'Ini_O
227 stop
228 end if
229 end if
230
231 end subroutine Ini_Open
232
233 function Ini_ExtractFilePa
234 character(LEN=*), intent(I
235 character(LEN=Ini_max_stri
236 integer len, i
237
238 len = len_trim(aname)
239 do i = len, 1, -1
240 if (aname(i:i)=='/') t
```



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```
241      Ini_ExtractFilePath
242      return
243    end if
244  end do
245  Ini_ExtractFilePath = ''
246
247  end function Ini_ExtractFile
248
249  recursive subroutine Ini_Ope
250
251    Type(TIniFile) :: Ini
252
253    character (LEN=*), intent
254    integer, intent(IN) :: un
255    logical, intent(OUT) :: e
256    logical, optional, intent
257    logical, optional, intent
258    character (LEN=Ini_max_st
259    integer lastpos, i
260    Type (TNameValueList) Inc
261    logical doappend, FileExi
262
263    if (present(append)) then
264      doappend=append
265    else
266      doappend=.false.
267    end if
268
269    if (present(only_if_undef
270      isDefault = only_if_un
```

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```
241      Ini_ExtractFilePat
242      return
243    end if
244  end do
245  Ini_ExtractFilePath = ''
246
247  end function Ini_ExtractFi
248
249  recursive subroutine Ini_O
250    error, slash_comments,
251    Type(TIniFile) :: Ini
252
253    character (LEN=*), intent(
254    integer, intent(IN) :: uni
255    logical, intent(OUT) :: er
256    logical, optional, intent(
257    logical, optional, intent(
258    character (LEN=Ini_max_str
259    integer lastpos, i
260    Type (TNameValueList) Incu
261    logical doappend, FileExis
262
263    if (present(append)) then
264      doappend=append
265    else
266      doappend=.false.
267    end if
268
269    if (present(only_if_undefi
270      isDefault = only_if_un
```

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```
271      else
272          isDefault = .false.
273      end if
274
275      if (.not. doappend) then
276          call TNameValueList_Ini
277          call TNameValueList_Ini
278      end if
279
280      call TNameValueList_Init(I
281      call TNameValueList_Init(D
282
283      if (present(slash_comments
284          Ini%SlashComments = slash
285      else
286          Ini%SlashComments = .fals
287      end if
288
289      open(unit=unit_id,file=fil
290
291      do
292          read (unit_id,'(a)',end=
293          if (Inline == 'END') exi
294          if (Inline(1:8) == 'INCL
295              lastpos = scan(InLi
296              if (lastpos/=0) the
297                  call TNameValueLis
298              else
299                  stop 'Ini_Open_Fil
300          end if
```

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```
271      else
272          isDefault = .false.
273      end if
274
275      if (.not. doappend) then
276          call TNameValueList_In
277          call TNameValueList_In
278      end if
279
280      call TNameValueList_Init(I
281      call TNameValueList_Init(D
282
283      if (present(slash_comments
284          Ini%SlashComments = sl
285      else
286          Ini%SlashComments = .f
287      end if
288
289      open(unit=unit_id,file=fil
290
291      do
292          read (unit_id,'(a)',en
293          if (Inline == 'END') e
294          if (Inline(1:8) == 'IN
295              lastpos = scan(InL
296              if (lastpos/=0) th
297                  call TNameValu
298              else
299                  stop 'Ini_Open
300          end if
```

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```
301      elseif (InLine(1:8) == '
302          !Settings to read in
303          lastpos = scan(InLin
304              if (lastpos/=0) the
305                  call TNameValueLis
306              else
307                  stop 'Ini_Open_Fil
308              end if
309          elseif (InLine /= '') th
310              call Ini_NameValue_Add(
311          end if
312      end do
313
314      400 close(unit_id)
315      error=.false.
316
317      do i=1, IncudeFiles%Count
318          if (error) exit
319          IncludeFile=IncudeFiles
320          inquire(file=IncludeFil
321              if (.not. FileExists) t
322                  IncludeFile=trim(Ini_
323                  inquire(file=IncludeF
324                  if (.not. FileExists)
325                      write(*,*) 'Ini_O
326                  stop
327              end if
328          end if
329          call Ini_Open_File(Ini,
330                          erro
```

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```
301      elseif (InLine(1:8) ==
302          !Settings to read
303          lastpos = scan(InL
304              if (lastpos/=0) th
305                  call TNameValu
306              else
307                  stop 'Ini_Open
308              end if
309          elseif (InLine /= '')
310              call Ini_NameValue
311          end if
312      end do
313
314      400 close(unit_id)
315      error=.false.
316
317      do i=1, IncudeFiles%Count
318          if (error) exit
319          IncludeFile=IncudeFile
320          inquire(file=IncludeFi
321              if (.not. FileExists)
322                  IncludeFile=trim(I
323                  inquire(file=Inclu
324                  if (.not. FileExis
325                      write(*,*) 'In
326                  stop
327              end if
328          end if
329          call Ini_Open_File(Ini
330                          error, slash_comme
```

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ile.f90, Top line: 331

```
331      end do
332      do i=1, DefaultValueFiles%
333          if (error) exit
334          IncludeFile=DefaultValu
335          inquire(file=IncludeFil
336          if (.not. FileExists) t
337              IncludeFile=trim(Ini_
338              inquire(file=IncludeF
339              if (.not. FileExists)
340                  write(*,*) 'Ini_0
341                  stop
342              end if
343          end if
344          call Ini_Open_File(Ini,
345                          erro
346      end do
347
348      call TNameValueList_Clear(
349      call TNameValueList_Clear(
350
351      return
352
353      500 error=.true.
354          call TNameValueList_Clear(
355          call TNameValueList_Clear(
356
357      end subroutine Ini_Open_File
358
359      subroutine Ini_Open_Fromline
360          Type(TIniFile) :: Ini
```

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```
331      end do
332      do i=1, DefaultValueFiles%
333          if (error) exit
334          IncludeFile=DefaultVal
335          inquire(file=IncludeFi
336          if (.not. FileExists)
337              IncludeFile=trim(I
338              inquire(file=Inclu
339              if (.not. FileExis
340                  write(*,*) 'In
341                  stop
342              end if
343          end if
344          call Ini_Open_File(Ini
345                          error, slash_comme
346      end do
347
348      call TNameValueList_Clear(
349      call TNameValueList_Clear(
350
351      return
352
353      500 error=.true.
354          call TNameValueList_Clear(
355          call TNameValueList_Clear(
356
357      end subroutine Ini_Open_Fi
358
359      subroutine Ini_Open_Fromli
360          Type(TIniFile) :: Ini
```

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```
361
362     integer, intent(IN) :: Num
363     character (LEN=*), dimensi
364     logical, intent(IN) :: sla
365     integer i
366
367     call TNameValueList_Init(I
368     call TNameValueList_Init(I
369
370     Ini%SlashComments = slash_
371
372     do i=1,NumLines
373         call Ini_NameValue_Add(
374     end do
375
376 end subroutine Ini_Open_Fro
377
378 subroutine Ini_Close
379
380     call Ini_close_File(DefIni
381
382 end subroutine Ini_Close
383
384
385 subroutine Ini_Close_File(In
386     Type(TIniFile) :: Ini
387
388     call TNameValueList_Clear(
389     call TNameValueList_Clear(
390
```

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```
361
362     integer, intent(IN) :: Num
363     character (LEN=*), dimensi
364     logical, intent(IN) :: sla
365     integer i
366
367     call TNameValueList_Init(I
368     call TNameValueList_Init(I
369
370     Ini%SlashComments = slash_
371
372     do i=1,NumLines
373         call Ini_NameValue_Add
374     end do
375
376 end subroutine Ini_Open_F
377
378 subroutine Ini_Close
379
380     call Ini_close_File(DefIni
381
382 end subroutine Ini_Close
383
384
385 subroutine Ini_Close_File(
386     Type(TIniFile) :: Ini
387
388     call TNameValueList_Clear(
389     call TNameValueList_Clear(
390
```



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```
391      end subroutine Ini_Close_Fi
392
393
394
395      function Ini_Read_String(Key
396      character (LEN=*), intent(I
397      logical, optional, intent(I
398      character(LEN=Ini_max_strin
399
400      if (present(NotFoundFail))
401          AValue = Ini_Read_String
402      else
403          AValue = Ini_Read_String
404      end if
405
406      end function Ini_Read_String
407
408      function Ini_Read_String_Def
409      character (LEN=*), intent(I
410      character(LEN=Ini_max_strin
411      logical, intent(in), option
412
413      if (present(AllowBlank)) th
414          AValue = Ini_Read_String
415      else
416          AValue = Ini_Read_String
417      end if
418
419      end function Ini_Read_String
420
```

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```
391      end subroutine Ini_Close_
392
393
394
395      function Ini_Read_String(K
396      character (LEN=*), intent(
397      logical, optional, intent(
398      character(LEN=Ini_max_stri
399
400      if (present(NotFoundFail))
401          AValue = Ini_Read_Stri
402      else
403          AValue = Ini_Read_Stri
404      end if
405
406      end function Ini_Read_Stri
407
408      function Ini_Read_String_D
409      character (LEN=*), intent(
410      character(LEN=Ini_max_stri
411      logical, intent(in), optio
412
413      if (present(AllowBlank)) t
414          AValue = Ini_Read_Stri
415      else
416          AValue = Ini_Read_Stri
417      end if
418
419      end function Ini_Read_Stri
420
```

/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 421

```
421
422 function Ini_Read_String_Fil
423   Type(TIniFile) :: Ini
424   character (LEN=*), intent(I
425   logical, optional, intent(I
426   character(LEN=Ini_max_strin
427
428   call TNameValueList_ValueOf
429
430   if (AValue/='') then
431
432     call TNameValueList_Add(I
433     if (Ini_Echo_Read) write (
434     return
435
436   end if
437   if (present(NotFoundFail))
438     if (NotFoundFail) then
439       write(*,*) 'key not f
440       stop
441     end if
442   else if (Ini_fail_on_not_fo
443     write(*,*) 'key not foun
444     stop
445   end if
446
447 end function Ini_Read_String
448
449 function Ini_Read_String_Def
450   Type(TIniFile) :: Ini
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 421

```
421
422 function Ini_Read_String_F
423   Type(TIniFile) :: Ini
424   character (LEN=*), intent(
425   logical, optional, intent(
426   character(LEN=Ini_max_stri
427
428   call TNameValueList_ValueO
429
430   if (AValue/='') then
431
432     call TNameValueList_A
433     if (Ini_Echo_Read) wri
434     return
435
436   end if
437   if (present(NotFoundFail))
438     if (NotFoundFail) then
439       write(*,*) 'key no
440       stop
441     end if
442   else if (Ini_fail_on_not_f
443     write(*,*) 'key not fo
444     stop
445   end if
446
447 end function Ini_Read_Stri
448
449 function Ini_Read_String_D
450   Type(TIniFile) :: Ini
```

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```
451 character (LEN=*), intent(I
452 character(LEN=Ini_max_strin
453 logical, intent(in), option
454
455 if (Ini_HasKey_File(Ini,Key
456   AValue = Ini_Read_String_f
457   if (present(AllowBlank)) t
458     if (AllowBlank) return
459   end if
460   if (AValue=='') AValue = D
461 else
462   AValue = Default
463 end if
464
465 end function Ini_Read_String
466
467 function Ini_HasKey(Key) res
468 character (LEN=*), intent(I
469 logical AValue
470
471 AValue = Ini_HasKey_File(De
472
473 end function Ini_HasKey
474
475 function Ini_HasKey_File(Ini
476 type(TIniFile), intent(in)
477 character (LEN=*), intent(I
478 logical AValue
479
480 Avalue = TNameValueList_
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 451

```
451 character (LEN=*), intent(
452 character(LEN=Ini_max_stri
453 logical, intent(in), optio
454
455 if (Ini_HasKey_File(Ini,Ke
456   AValue = Ini_Read_Stri
457   if (present(AllowBlank)
458     if (AllowBlank) re
459   end if
460   if (AValue=='') AValue
461 else
462   AValue = Default
463 end if
464
465 end function Ini_Read_Stri
466
467 function Ini_HasKey(Key) r
468 character (LEN=*), intent(
469 logical AValue
470
471 AValue = Ini_HasKey_File(D
472
473 end function Ini_HasKey
474
475 function Ini_HasKey_File(I
476 type(TIniFile), intent(in)
477 character (LEN=*), intent(
478 logical AValue
479
480 Avalue = TNameValueList_Ha
```

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ile.f90, Top line: 481

```
481
482     end function Ini_HasKey_File
483
484     function Ini_Key_To_Arraykey(
485         character (LEN=*), intent(
486             integer, intent(in) :: ind
487             character(LEN=Ini_max_stri
488
489         character(LEN=32) :: numst
490         write (numstr,*) index
491         numstr=adjustl(numstr)
492         AValue = trim(Key) // '('
493
494     end function Ini_Key_To_Array
495
496     function Ini_Read_String_Arr
497         character (LEN=*), intent(I
498         integer, intent(in) :: inde
499         logical, optional, intent(I
500         character(LEN=Ini_max_strin
501
502         if (present(NotFoundFail))
503             AValue = Ini_Read_String
504         else
505             AValue = Ini_Read_String
506         end if
507
508     end function Ini_Read_String
509
510     function Ini_Read_String_Arr
```

/Users/lp1opa/Compare/camb\_des/inifile.  
f90, Top line: 481

```
481
482     end function Ini_HasKey_Fi
483
484     function Ini_Key_To_Arrayk
485         character (LEN=*), intent(
486         integer, intent(in) :: ind
487         character(LEN=Ini_max_stri
488
489         character(LEN=32) :: numst
490         write (numstr,*) index
491         numstr=adjustl(numstr)
492         AValue = trim(Key) // '('
493
494     end function Ini_Key_To_Ar
495
496     function Ini_Read_String_A
497         character (LEN=*), intent(
498         integer, intent(in) :: ind
499         logical, optional, intent(
500         character(LEN=Ini_max_stri
501
502         if (present(NotFoundFail))
503             AValue = Ini_Read_Stri
504         else
505             AValue = Ini_Read_Stri
506         end if
507
508     end function Ini_Read_Stri
509
510     function Ini_Read_String_A
```



/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 511

```
511      Type(TIniFile) :: Ini
512      integer, intent(in) :: inde
513      character (LEN=*), intent(I
514      logical, optional, intent(I
515      character(LEN=Ini_max_strin
516      character(LEN=Ini_max_strin
517
518      ArrayKey = Ini_Key_To_Arr
519      if (present(NotFoundFail))
520          AValue = Ini_Read_String
521      else
522          AValue = Ini_Read_String
523      end if
524
525  end function Ini_Read_String
526
527  function Ini_Read_Int_Array(
528      integer, optional, intent
529      integer, intent(in) :: in
530      character (LEN=*), intent
531      integer Ini_Read_Int_Arra
532
533      if (present(Default)) the
534          Ini_Read_Int_Array = Ini
535      else
536          Ini_Read_Int_Array = Ini
537      end if
538
539  end function Ini_Read_Int_A
540
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 511

```
511      Type(TIniFile) :: Ini
512      integer, intent(in) :: ind
513      character (LEN=*), intent(
514      logical, optional, intent(
515      character(LEN=Ini_max_stri
516      character(LEN=Ini_max_stri
517
518      ArrayKey = Ini_Key_To_Arra
519      if (present(NotFoundFail))
520          AValue = Ini_Read_Stri
521      else
522          AValue = Ini_Read_Stri
523      end if
524
525  end function Ini_Read_Stri
526
527  function Ini_Read_Int_Arra
528      integer, optional, intent(
529      integer, intent(in) :: ind
530      character (LEN=*), intent(
531      integer Ini_Read_Int_Array
532
533      if (present(Default)) then
534          Ini_Read_Int_Array = I
535      else
536          Ini_Read_Int_Array = I
537      end if
538
539  end function Ini_Read_Int_
540
```



/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 541

```
541 function Ini_Read_Int_Array_  
542 !Reads Key(1), Key(2), etc.  
543 Type(TIniFile) :: Ini  
544 integer Ini_Read_Int_Array_  
545 integer, optional, intent(I  
546 integer, intent(in) :: inde  
547 character (LEN=*), intent(I  
548 character(LEN=Ini_max_strin  
549   ArrrayKey = Ini_Key_To_Ar  
550   if (present(Default)) the  
551     Ini_Read_Int_Array_File  
552   else  
553     Ini_Read_Int_Array_File  
554   end if  
555 end function Ini_Read_Int_Ar  
556  
557  
558 function Ini_Read_Int(Key, D  
559 integer, optional, intent  
560 character (LEN=*), intent  
561 integer Ini_Read_Int  
562  
563   if (present(Default)) the  
564     Ini_Read_Int = Ini_Read_  
565   else  
566     Ini_Read_Int = Ini_Read_  
567   end if  
568 end function Ini_Read_Int  
569  
570 function Ini_Read_Int_File(I
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 541

```
541 function Ini_Read_Int_Arra  
542 !Reads Key(1), Key(2), etc  
543 Type(TIniFile) :: Ini  
544 integer Ini_Read_Int_Array  
545 integer, optional, intent(  
546 integer, intent(in) :: ind  
547 character (LEN=*), intent(  
548 character(LEN=Ini_max_stri  
549 ArrrayKey = Ini_Key_To_Arr  
550 if (present(Default)) then  
551   Ini_Read_Int_Array_Fil  
552 else  
553   Ini_Read_Int_Array_Fil  
554 end if  
555 end function Ini_Read_Int_  
556  
557  
558 function Ini_Read_Int(Key,  
559 integer, optional, intent(  
560 character (LEN=*), intent(  
561 integer Ini_Read_Int  
562  
563   if (present(Default)) then  
564     Ini_Read_Int = Ini_Rea  
565   else  
566     Ini_Read_Int = Ini_Rea  
567   end if  
568 end function Ini_Read_Int  
569  
570 function Ini_Read_Int_File
```

/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 571

```
571      Type(TIniFile) :: Ini
572      integer Ini_Read_Int_File
573      integer, optional, intent(I
574      character (LEN=*), intent(
575      character(LEN=Ini_max_strin
576
577      S = Ini_Read_String_File(In
578      if (S == ' ') then
579          if (.not. present(Defaul
580              write(*,*) 'no value f
581              stop
582          end if
583          Ini_Read_Int_File = Defa
584          write (S,*) Default
585          call TNameValueList_Add
586      else
587          if (verify(trim(S), '-+0123
588              read (S,*, err = 10) Ini_R
589          end if
590      return
591      10 write (*,*) 'error reading
592      stop
593
594      end function Ini_Read_Int_Fi
595
596      function Ini_Read_Double(Key
597          double precision, optiona
598          character (LEN=*), intent
599          double precision Ini_Read
600
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 571

```
571      Type(TIniFile) :: Ini
572      integer Ini_Read_Int_File
573      integer, optional, intent(
574      character (LEN=*), intent
575      character(LEN=Ini_max_stri
576
577      S = Ini_Read_String_File(I
578      if (S == ' ') then
579          if (.not. present(Defa
580              write(*,*) 'no val
581              stop
582          end if
583          Ini_Read_Int_File = De
584          write (S,*) Default
585          call TNameValueList_A
586      else
587          if (verify(trim(S), '-+
588              read (S,*, err = 10) I
589          end if
590      return
591      10 write (*,*) 'error reading
592      stop
593
594      end function Ini_Read_Int_
595
596      function Ini_Read_Double(K
597          double precision, optional
598          character (LEN=*), intent(
599          double precision Ini_Read
600
```

/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 601

```
601      if (present(Default)) the
602          Ini_Read_Double = Ini_Re
603      else
604          Ini_Read_Double = Ini_Re
605      end if
606
607  end function Ini_Read_Double
608
609  function Ini_Read_Double_Fil
610  Type(TIniFile) :: Ini
611  double precision Ini_Read_D
612  double precision, optional,
613  character (LEN=*), intent(I
614  character(LEN=Ini_max_strin
615
616  S = Ini_Read_String_File(In
617  if (S == '') then
618      if (.not. present(Default
619          write(*,*) 'no value f
620      stop
621  end if
622  Ini_Read_Double_File = D
623  write (S,*) Default
624
625      call TNameValueList_Add
626
627  else
628      read (S,*, err=10) Ini_Rea
629  end if
630
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 601

```
601      if (present(Default)) then
602          Ini_Read_Double = Ini_
603      else
604          Ini_Read_Double = Ini_
605      end if
606
607  end function Ini_Read_Doub
608
609  function Ini_Read_Double_F
610  Type(TIniFile) :: Ini
611  double precision Ini_Read_
612  double precision, optional
613  character (LEN=*), intent(
614  character(LEN=Ini_max_stri
615
616  S = Ini_Read_String_File(I
617  if (S == '') then
618      if (.not. present(Defa
619          write(*,*) 'no val
620      stop
621  end if
622  Ini_Read_Double_File =
623  write (S,*) Default
624
625      call TNameValueList_A
626
627  else
628      read (S,*, err=10) Ini
629  end if
630
```

/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 631

```
631 return
632
633 10 write (*,*) 'error reading
634 stop
635
636 end function Ini_Read_Double
637
638
639
640 function Ini_Read_Double_A
641 double precision, optiona
642 integer, intent(in) :: in
643 character (LEN=*), intent
644 double precision Ini_Read
645
646 if (present(Default)) the
647 Ini_Read_Double_Array =
648 else
649 Ini_Read_Double_Array =
650 end if
651
652 end function Ini_Read_Doub
653
654
655 function Ini_Read_Double_Arr
656
657 !Reads Key(1), Key(2), etc.
658
659 Type(TIniFile) :: Ini
660
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 631

```
631 return
632
633 10 write (*,*) 'error reading
634 stop
635
636 end function Ini_Read_Doub
637
638
639
640 function Ini_Read_Double_A
641 double precision, optional
642 integer, intent(in) :: ind
643 character (LEN=*), intent(
644 double precision Ini_Read_
645
646 if (present(Default)) then
647 Ini_Read_Double_Array
648 else
649 Ini_Read_Double_Array
650 end if
651
652 end function Ini_Read_Doub
653
654
655 function Ini_Read_Double_A
656
657 !Reads Key(1), Key(2), etc
658
659 Type(TIniFile) :: Ini
660
```



/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 661

```
661 double precision Ini_Read_D
662 double precision, optional,
663 integer, intent(in) :: inde
664 character (LEN=*), intent(I
665 character(LEN=Ini_max_strin
666
667 ArrayKey = Ini_Key_To_Ar
668 if (present(Default)) the
669
670 Ini_Read_Double_Array_Fi
671 else
672 Ini_Read_Double_Array_Fi
673 end if
674 end function Ini_Read_Double
675
676 function Ini_Read_Real(Key
677 real, optional, intent(IN
678 character (LEN=*), intent
679 real Ini_Read_Real
680
681 if (present(Default)) the
682 Ini_Read_Real = Ini_Read
683 else
684 Ini_Read_Real = Ini_Read
685 end if
686
687 end function Ini_Read_Real
688
689 function Ini_Read_Real_Fil
690 Type(TIniFile) :: Ini
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 661

```
661 double precision Ini_Read
662 double precision, optional
663 integer, intent(in) :: ind
664 character (LEN=*), intent(
665 character(LEN=Ini_max_stri
666
667 ArrayKey = Ini_Key_To_Arr
668 if (present(Default)) then
669
670 Ini_Read_Double_Array_
671 else
672 Ini_Read_Double_Array_
673 end if
674 end function Ini_Read_Doub
675
676 function Ini_Read_Real(Key
677 real, optional, intent(IN)
678 character (LEN=*), intent(
679 real Ini_Read_Real
680
681 if (present(Default)) then
682 Ini_Read_Real = Ini_Re
683 else
684 Ini_Read_Real = Ini_Re
685 end if
686
687 end function Ini_Read_Real
688
689 function Ini_Read_Real_Fil
690 Type(TIniFile) :: Ini
```



/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 691

```
691 real Ini_Read_Real_File
692 real, optional, intent(IN)
693 character (LEN=*), intent(
694 character(LEN=Ini_max_stri
695
696 S = Ini_Read_String_File(I
697 if (S == '') then
698     if (.not. present(Default
699         write(*,*) 'no value f
700         stop
701     end if
702     Ini_Read_Real_File = Def
703     write (S,*) Default
704     call TNameValueList_Add
705
706 else
707     read (S,*, err=10) Ini_Rea
708 end if
709
710 return
711
712 10 write (*,*) 'error reading
713     stop
714
715 end function Ini_Read_Real_F
716
717
718
719 function Ini_Read_Real_Arra
720     real, optional, intent(IN
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 691

```
691 real Ini_Read_Real_File
692 real, optional, intent(IN)
693 character (LEN=*), intent(
694 character(LEN=Ini_max_stri
695
696 S = Ini_Read_String_File(I
697 if (S == '') then
698     if (.not. present(Defa
699         write(*,*) 'no val
700         stop
701     end if
702     Ini_Read_Real_File = D
703     write (S,*) Default
704     call TNameValueList_A
705
706 else
707     read (S,*, err=10) Ini
708 end if
709
710 return
711
712 10 write (*,*) 'error reading
713     stop
714
715 end function Ini_Read_Real
716
717
718
719 function Ini_Read_Real_Arr
720     real, optional, intent(IN
```

/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 721

```
721 integer, intent(in) :: in
722 character (LEN=*), intent
723 real Ini_Read_Real_Array
724
725 if (present(Default)) the
726 Ini_Read_Real_Array = In
727 else
728 Ini_Read_Real_Array = In
729 end if
730 end function Ini_Read_Real_
731
732 function Ini_Read_Real_Array
733 !Reads Key(1), Key(2), etc.
734 Type(TIniFile) :: Ini
735 real Ini_Read_Real_Array_Fi
736 real, optional, intent(IN)
737 integer, intent(in) :: inde
738 character (LEN=*), intent(I
739 character(LEN=Ini_max_strin
740
741 ArrayKey = Ini_Key_To_Ar
742 if (present(Default)) the
743 Ini_Read_Real_Array_File
744 else
745 Ini_Read_Real_Array_File
746 end if
747 end function Ini_Read_Real_A
748
749 function Ini_Read_Logical(Ke
750 Logical, optional, intent
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 721

```
721 integer, intent(in) :: ind
722 character (LEN=*), intent(
723 real Ini_Read_Real_Array
724
725 if (present(Default)) then
726 Ini_Read_Real_Array =
727 else
728 Ini_Read_Real_Array =
729 end if
730 end function Ini_Read_Real
731
732 function Ini_Read_Real_Arr
733 !Reads Key(1), Key(2), etc
734 Type(TIniFile) :: Ini
735 real Ini_Read_Real_Array_F
736 real, optional, intent(IN)
737 integer, intent(in) :: ind
738 character (LEN=*), intent(
739 character(LEN=Ini_max_stri
740
741 ArrayKey = Ini_Key_To_Arr
742 if (present(Default)) then
743 Ini_Read_Real_Array_Fi
744 else
745 Ini_Read_Real_Array_Fi
746 end if
747 end function Ini_Read_Real
748
749 function Ini_Read_Logical(
750 Logical, optional, intent(
```

/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 751

```
751      character (LEN=*), intent
752      logical Ini_Read_Logical
753
754      if (present(Default)) then
755          Ini_Read_Logical = Ini_R
756      else
757          Ini_Read_Logical = Ini_R
758      end if
759  end function Ini_Read_Logica
760
761  function Ini_Read_Logical_Fi
762  Type(TIniFile) :: Ini
763
764  logical Ini_Read_Logical_Fi
765  logical, optional, intent(I
766  character (LEN=*), intent(
767
768  character(LEN=Ini_max_strin
769
770  S = Ini_Read_String_File(In
771  if (S == ' ') then
772      if (.not. present(Default
773          write(*,*) 'no value f
774      stop
775  end if
776  Ini_Read_Logical_File =
777  write (S,*) Default
778
779  call TNameValueList_Add
780
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 751

```
751      character (LEN=*), intent(
752      logical Ini_Read_Logical
753
754      if (present(Default)) then
755          Ini_Read_Logical = Ini
756      else
757          Ini_Read_Logical = Ini
758      end if
759  end function Ini_Read_Logi
760
761  function Ini_Read_Logical_
762  Type(TIniFile) :: Ini
763
764  logical Ini_Read_Logical_F
765  logical, optional, intent(
766  character (LEN=*), intent
767
768  character(LEN=Ini_max_stri
769
770  S = Ini_Read_String_File(I
771  if (S == ' ') then
772      if (.not. present(Defa
773          write(*,*) 'no val
774      stop
775  end if
776  Ini_Read_Logical_File =
777  write (S,*) Default
778
779  call TNameValueList_A
780
```

/Users/lp1opa/Compare/camb\_simdata/inifile.f90, Top line: 781

```
781      else
782
783          if (verify(trim(S), '10TF')
784              read (S,*, err = 10) Ini_R
785          end if
786
787      return
788
789      10 write (*,*) 'error reading
790          stop
791      end function Ini_Read_Logica
792
793
794
795      subroutine Ini_SaveReadValue
796          character(LEN=*) :: afile
797          integer, intent(in) :: unit
798
799          call Ini_SaveReadValues_Fil
800
801      end subroutine Ini_SaveReadV
802
803
804
805      subroutine Ini_SaveReadValue
806          Type(TIniFile) :: Ini
807          character(LEN=*), intent(in
808          integer, intent(in) :: unit
809          integer i
810
```

/Users/lp1opa/Compare/camb\_des/inifile.f90, Top line: 781

```
781      else
782
783          if (verify(trim(S), '10
784              read (S,*, err = 10) I
785          end if
786
787      return
788
789      10 write (*,*) 'error reading
790          stop
791      end function Ini_Read_Logi
792
793
794
795      subroutine Ini_SaveReadVal
796          character(LEN=*) :: afile
797          integer, intent(in) :: uni
798
799          call Ini_SaveReadValues_Fi
800
801      end subroutine Ini_SaveRea
802
803
804
805      subroutine Ini_SaveReadVal
806          Type(TIniFile) :: Ini
807          character(LEN=*), intent(i
808          integer, intent(in) :: uni
809          integer i
810
```

/Users/lp1opa/Compare/camb\_simdata/inif  
ile.f90, Top line: 811

```
811 open(unit=unit_id,file=afil
812
813 do i=1, Ini%ReadValues%Coun
814
815 write (unit_id,'(a)') trim
816 //trim
817
818 end do
819
820 close(unit_id)
821 return
822
823 500 write(*,*) 'Ini_SaveReadVa
824
825 end subroutine Ini_SaveReadV
826
827 end module IniFile
828
829
```

/Users/lp1opa/Compare/camb\_des/inifile.  
f90, Top line: 811

```
811 open(unit=unit_id,file=afi
812
813 do i=1, Ini%ReadValues%Cou
814
815 write (unit_id,'(a)')
816 //trim(Ini%ReadVal
817
818 end do
819
820 close(unit_id)
821 return
822
823 500 write(*,*) 'Ini_SaveReadVa
824
825 end subroutine Ini_SaveRea
826
827 end module IniFile
828
829
```