```
!234567890
!       List of Wyckoff positions.
!       http://cci.lbl.gov/cctbx/cctbx_web.cgi
!       http://www.cryst.ehu.es/cgi-bin/cryst/programs/nph-wp-list
!       Written by In-Ho Lee, KRISS, September 11, 2013.
        subroutine rwycpos(indexsg,pos,nwyc)
        implicit none
        integer indexsg,nwyc
        real*8 pos(3,nwyc)
        real*8, allocatable :: posdum(:,:),wrk11(:)
        integer, allocatable :: iwrk11(:)
        integer i,j
        real ranmar

        select case(indexsg)
        case(1)
        do i=1,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo

        case(2)
        pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
        pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
        pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
        pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.0d0
        pos(1,5)=0.5d0 ; pos(2,5)=0.5d0 ; pos(3,5)=0.0d0
        pos(1,6)=0.5d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.5d0
        pos(1,7)=0.0d0 ; pos(2,7)=0.5d0 ; pos(3,7)=0.5d0
        pos(1,8)=0.5d0 ; pos(2,8)=0.5d0 ; pos(3,8)=0.5d0
        do i=9,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo

        case(3)
        do i=1,int(nwyc/5)
        pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
        enddo
        do i=1*int(nwyc/5)+1,2*int(nwyc/5)
        pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
        enddo
        do i=2*int(nwyc/5)+1,3*int(nwyc/5)
        pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
        enddo
        do i=3*int(nwyc/5)+1,4*int(nwyc/5)
        pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
        enddo
        do i=4*int(nwyc/5)+1,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo

        case(4)
        do i=1,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo

        case(5)
        do i=1,int(nwyc/3)
        pos(1,i)=0.0d0    ; pos(2,i)=ranmar()  ; pos(3,i)=0.0d0
        enddo
        do i=1*int(nwyc/3)+1,2*int(nwyc/3)
        pos(1,i)=0.0d0    ; pos(2,i)=ranmar()  ; pos(3,i)=0.5d0
        enddo
        do i=2*int(nwyc/3)+1,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo

        case(6)
        do i=1,int(nwyc/3)
        pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
```



```
        enddo
        do i=1*int(nwyc/3)+1,2*int(nwyc/3)
        pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
        enddo
        do i=2*int(nwyc/3)+1,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo

        case(7)
        do i=1,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo

        case(8)
        do i=1,int(nwyc/2)
        pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
        enddo
        do i=int(nwyc/2)+1,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo

        case(9)
        do i=1,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo

        case(10)
        pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
        pos(1,2)=0.0d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.0d0
        pos(1,3)=0.0d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.5d0
        pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.0d0
        pos(1,5)=0.5d0 ; pos(2,5)=0.5d0 ; pos(3,5)=0.0d0
        pos(1,6)=0.0d0 ; pos(2,6)=0.5d0 ; pos(3,6)=0.5d0
        pos(1,7)=0.5d0 ; pos(2,7)=0.0d0 ; pos(3,7)=0.5d0
        pos(1,8)=0.5d0 ; pos(2,8)=0.5d0 ; pos(3,8)=0.5d0
        do i=9,int(nwyc/7)
        pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
        enddo
        do i=1*int(nwyc/7)+1,2*int(nwyc/7)
        pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
        enddo
        do i=2*int(nwyc/7)+1,3*int(nwyc/7)
        pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
        enddo
        do i=3*int(nwyc/7)+1,4*int(nwyc/7)
        pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
        enddo
        do i=4*int(nwyc/7)+1,5*int(nwyc/7)
        pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
        enddo
        do i=5*int(nwyc/7)+1,6*int(nwyc/7)
        pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
        enddo
        do i=6*int(nwyc/7)+1,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo

        case(11)
        pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
        pos(1,2)=0.5d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.0d0
        pos(1,3)=0.0d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.5d0
        pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
        do i=5,int(nwyc/2)
        pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
        enddo
        do i=int(nwyc/2)+1,nwyc
        pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
        enddo
```

```
      case(12)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.00d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.50d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.50d0 ; pos(3,4)=0.50d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.00d0
      pos(1,6)=0.25d0 ; pos(2,6)=0.25d0 ; pos(3,6)=0.50d0
      do i=7,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(13)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(14)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
      do i=5,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(15)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.00d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.50d0
      do i=5,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(16)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.5d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.5d0
      pos(1,7)=0.0d0 ; pos(2,7)=0.5d0 ; pos(3,7)=0.5d0
      pos(1,8)=0.5d0 ; pos(2,8)=0.5d0 ; pos(3,8)=0.5d0
      do i=9,int(nwyc/13)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/13)+1,2*int(nwyc/13)
```



```
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=2*int(nwyc/13)+1,3*int(nwyc/13)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/13)+1,4*int(nwyc/13)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/13)+1,5*int(nwyc/13)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=5*int(nwyc/13)+1,6*int(nwyc/13)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=6*int(nwyc/13)+1,7*int(nwyc/13)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=7*int(nwyc/13)+1,8*int(nwyc/13)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=8*int(nwyc/13)+1,9*int(nwyc/13)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=9*int(nwyc/13)+1,10*int(nwyc/13)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=10*int(nwyc/13)+1,11*int(nwyc/13)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=11*int(nwyc/13)+1,12*int(nwyc/13)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=12*int(nwyc/13)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(17)
      do i=1,int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(18)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(19)
      do i=1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```

```
      case(20)
      do i=1,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(21)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(22)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.75d0
      do i=5,int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(23)
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      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)+1
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(24)
      do i=1,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(25)
      do i=1,int(nwyc/9)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/9)+1,2*int(nwyc/9)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/9)+1,3*int(nwyc/9)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/9)+1,4*int(nwyc/9)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/9)+1,5*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/9)+1,6*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/9)+1,7*int(nwyc/9)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/9)+1,8*int(nwyc/9)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=8*int(nwyc/9)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```

```
      case(26)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(27)
      do i=1,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(28)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(29)
      do i=1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(30)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(31)
      do i=1,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(32)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
```



```
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(33)
      do i=1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(34)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(35)
      do i=1,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(36)
      do i=1,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(37)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(38)
      do i=1,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
```

```
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(39)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(40)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(41)
      do i=1,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(42)
      do i=1,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(43)
      do i=1,int(nwyc/2)
```



```
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(44)
      do i=1,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(45)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(46)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(47)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.0d0 ; pos(2,5)=0.5d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.5d0 ; pos(3,6)=0.0d0
      pos(1,7)=0.0d0 ; pos(2,7)=0.5d0 ; pos(3,7)=0.5d0
      pos(1,8)=0.5d0 ; pos(2,8)=0.5d0 ; pos(3,8)=0.5d0
      do i=9,int(nwyc/19)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/19)+1,2*int(nwyc/19)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=2*int(nwyc/19)+1,3*int(nwyc/19)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/19)+1,4*int(nwyc/19)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/19)+1,5*int(nwyc/19)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
```

```
      do i=5*int(nwyc/19)+1,6*int(nwyc/19)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=6*int(nwyc/19)+1,7*int(nwyc/19)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=7*int(nwyc/19)+1,8*int(nwyc/19)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=8*int(nwyc/19)+1,9*int(nwyc/19)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=9*int(nwyc/19)+1,10*int(nwyc/19)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=10*int(nwyc/19)+1,11*int(nwyc/19)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=11*int(nwyc/19)+1,12*int(nwyc/19)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=12*int(nwyc/19)+1,13*int(nwyc/19)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=13*int(nwyc/19)+1,14*int(nwyc/19)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=14*int(nwyc/19)+1,15*int(nwyc/19)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=15*int(nwyc/19)+1,16*int(nwyc/19)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=16*int(nwyc/19)+1,17*int(nwyc/19)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=17*int(nwyc/19)+1,18*int(nwyc/19)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=18*int(nwyc/19)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(48)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.50d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.75d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.75d0
      pos(1,5)=0.75d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.25d0
      pos(1,6)=0.25d0 ; pos(2,6)=0.25d0 ; pos(3,6)=0.25d0
      do i=7,int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=0.75d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.75d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=0.75d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=6*int(nwyc/7)+1,nwyc
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```
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(49)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.00d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.00d0
      pos(1,5)=0.0d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.25d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.25d0
      pos(1,7)=0.0d0 ; pos(2,7)=0.5d0 ; pos(3,7)=0.25d0
      pos(1,8)=0.5d0 ; pos(2,8)=0.5d0 ; pos(3,8)=0.25d0
      do i=9,int(nwyc/10)
      pos(1,i)=0.00d0 ; pos(2,i)=0.00d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/10)+1,2*int(nwyc/10)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/10)+1,3*int(nwyc/10)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/10)+1,4*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/10)+1,5*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/10)+1,6*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.25d0
      enddo
      do i=6*int(nwyc/10)+1,7*int(nwyc/10)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=7*int(nwyc/10)+1,8*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=8*int(nwyc/10)+1,9*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=9*int(nwyc/10)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(50)
      pos(1,1)=0.25d0 ; pos(2,1)=0.25d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.75d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.75d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.00d0 ; pos(2,5)=0.00d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.00d0 ; pos(2,6)=0.00d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=0.75d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/7)+1,nwyc
```

```
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(51)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/8)
      pos(1,i)=0.25d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=0.25d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(52)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/3)
      pos(1,i)=0.25d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(53)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(54)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
```



```
      pos(1,2)=0.0d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.0d0
      do i=3,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.25d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.25d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(55)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(56)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/3)
      pos(1,i)=0.25d0 ; pos(2,i)=0.75d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(57)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.0d0
      do i=3,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(58)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
```

```
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(59)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/5)
      pos(1,i)=0.25d0 ; pos(2,i)=0.75d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(60)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.0d0
      do i=3,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(61)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(62)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/2)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(63)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.0d0
      do i=4,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```



```
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(64)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.50d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.0d0
      do i=4,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(65)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.50d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.50d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.25d0 ; pos(2,6)=0.25d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/12)+1,2*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=2*int(nwyc/12)+1,3*int(nwyc/12)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/12)+1,4*int(nwyc/12)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/12)+1,5*int(nwyc/12)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/12)+1,6*int(nwyc/12)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/12)+1,7*int(nwyc/12)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/12)+1,8*int(nwyc/12)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=8*int(nwyc/12)+1,9*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=9*int(nwyc/12)+1,10*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=10*int(nwyc/12)+1,11*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=11*int(nwyc/12)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(66)
```

```
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.25d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.50d0 ; pos(3,4)=0.00d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.00d0
      pos(1,6)=0.25d0 ; pos(2,6)=0.75d0 ; pos(3,6)=0.00d0
      do i=7,int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(67)
      pos(1,1)=0.25d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.50d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.00d0
      pos(1,6)=0.25d0 ; pos(2,6)=0.25d0 ; pos(3,6)=0.50d0
      do i=7,int(nwyc/9)
      pos(1,i)=0.0d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/9)+1,2*int(nwyc/9)
      pos(1,i)=0.25d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/9)+1,3*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/9)+1,4*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/9)+1,5*int(nwyc/9)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=5*int(nwyc/9)+1,6*int(nwyc/9)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=6*int(nwyc/9)+1,7*int(nwyc/9)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/9)+1,8*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=8*int(nwyc/9)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(68)
      pos(1,1)=0.00d0 ; pos(2,1)=0.25d0 ; pos(3,1)=0.25d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.75d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.75d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.00d0
      do i=5,int(nwyc/5)
```



```
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=0.25d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(69)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.25d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.00d0
      pos(1,6)=0.25d0 ; pos(2,6)=0.25d0 ; pos(3,6)=0.25d0
      do i=7,int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/10)+1,2*int(nwyc/10)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/10)+1,3*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/10)+1,4*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/10)+1,5*int(nwyc/10)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/10)+1,6*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/10)+1,7*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/10)+1,8*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=8*int(nwyc/10)+1,9*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=9*int(nwyc/10)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(70)
      pos(1,1)=0.125d0 ; pos(2,1)=0.125d0 ; pos(3,1)=0.125d0
      pos(1,2)=0.125d0 ; pos(2,2)=0.125d0 ; pos(3,2)=0.625d0
      pos(1,3)=0.000d0 ; pos(2,3)=0.000d0 ; pos(3,3)=0.000d0
      pos(1,4)=0.500d0 ; pos(2,4)=0.500d0 ; pos(3,4)=0.500d0
      do i=5,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.125d0 ; pos(3,i)=0.125d0
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.125d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.125d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.125d0 ; pos(2,i)=0.125d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
```

```
      enddo

      case(71)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.50d0 ; pos(2,3)=0.50d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.50d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.50d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.25d0
      do i=6,int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/10)+1,2*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/10)+1,3*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/10)+1,4*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/10)+1,5*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/10)+1,6*int(nwyc/10)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/10)+1,7*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/10)+1,8*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=8*int(nwyc/10)+1,9*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=9*int(nwyc/10)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(72)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.50d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.00d0
      pos(1,3)=0.50d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.25d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.25d0
      do i=6,int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(73)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.25d0
      do i=3,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
```



```
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(74)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.75d0
      do i=5,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(75)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(76)
      do i=1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(77)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(78)
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```
      do i=1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(79)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(80)
      do i=1,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(81)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(82)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.75d0
      do i=5,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(83)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.0d0 ; pos(2,5)=0.5d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.0d0 ; pos(2,6)=0.5d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
```



```
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(84)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.00d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.50d0
      pos(1,5)=0.0d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.25d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.5d0 ; pos(3,6)=0.25d0
      do i=7,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(85)
      pos(1,1)=0.25d0 ; pos(2,1)=0.75d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.75d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.50d0
      do i=5,int(nwyc/3)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.25d0 ; pos(2,i)=0.75d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(86)
      pos(1,1)=0.25d0 ; pos(2,1)=0.25d0 ; pos(3,1)=0.25d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.75d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.50d0
      do i=5,int(nwyc/3)
      pos(1,i)=0.75d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(87)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.50d0
```

```
      pos(1,3)=0.00d0 ; pos(2,3)=0.50d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.50d0 ; pos(3,4)=0.25d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.25d0
      do i=6,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(88)
      pos(1,1)=0.0d0 ; pos(2,1)=0.25d0 ; pos(3,1)=0.125d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.25d0 ; pos(3,2)=5.0d0/8.0d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.50d0
      do i=5,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(89)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/10)+1,2*int(nwyc/10)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/10)+1,3*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/10)+1,4*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/10)+1,5*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/10)+1,6*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/10)+1,7*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=7*int(nwyc/10)+1,8*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=8*int(nwyc/10)+1,9*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=9*int(nwyc/10)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(90)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
```



```
      do i=3,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(91)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=3.0d0/8.0d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(92)
      do i=1,int(nwyc/2)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(93)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.00d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.50d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.5d0 ; pos(3,5)=0.25d0
      pos(1,6)=0.0d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.25d0
      do i=7,int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/10)+1,2*int(nwyc/10)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/10)+1,3*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/10)+1,4*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/10)+1,5*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/10)+1,6*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=6*int(nwyc/10)+1,7*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=7*int(nwyc/10)+1,8*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.75d0
      enddo
```

```
      do i=8*int(nwyc/10)+1,9*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=9*int(nwyc/10)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(94)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(95)
      do i=1,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=5.0d0/8.0d0
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(96)
      do i=1,int(nwyc/2)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(97)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
```



```
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=0.25d0
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(98)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,2)=0.0d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,2)=0.0d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,2)=0.125d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(99)
      do i=1,int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ;  pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(100)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(101)
      do i=1,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
```

```
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(102)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(103)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(104)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(105)
      do i=1,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```



```
      case(106)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(107)
      do i=1,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(108)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(109)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(110)
      do i=1,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(111)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.0d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/9)
```

```
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/9)+1,2*int(nwyc/9)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/9)+1,3*int(nwyc/9)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/9)+1,4*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/9)+1,5*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/9)+1,6*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=6*int(nwyc/9)+1,7*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=7*int(nwyc/9)+1,8*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=8*int(nwyc/9)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(112)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.25d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.25d0
      pos(1,5)=0.0d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.00d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.5d0 ; pos(3,6)=0.00d0
      do i=7,int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(113)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
```



```
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(114)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(115)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.0d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(116)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.25d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.00d0
      do i=5,int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.75d0
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
```

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      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(117)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.50d0
      do i=5,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(118)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.75d0
      do i=5,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0+pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0-pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(119)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.75d0
      do i=5,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0+pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```



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      case(120)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.00d0
      do i=5,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(121)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(122)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.125d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(123)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.0d0 ; pos(2,5)=0.5d0 ; pos(3,5)=0.5d0
      pos(1,6)=0.0d0 ; pos(2,6)=0.5d0 ; pos(3,6)=0.0d0
      do i=7,int(nwyc/15)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
```

```
      do i=1*int(nwyc/15)+1,2*int(nwyc/15)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/15)+1,3*int(nwyc/15)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/15)+1,4*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/15)+1,5*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/15)+1,6*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=6*int(nwyc/15)+1,7*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=7*int(nwyc/15)+1,8*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=8*int(nwyc/15)+1,9*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=9*int(nwyc/15)+1,10*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=10*int(nwyc/15)+1,11*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=11*int(nwyc/15)+1,12*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=12*int(nwyc/15)+1,13*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=13*int(nwyc/15)+1,14*int(nwyc/15)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=14*int(nwyc/15)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(124)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.00d0
      pos(1,5)=0.0d0 ; pos(2,5)=0.5d0 ; pos(3,5)=0.00d0
      pos(1,6)=0.0d0 ; pos(2,6)=0.5d0 ; pos(3,6)=0.25d0
      do i=7,int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
```



```
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(125)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.75d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.75d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.0d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.5d0
      pos(1,6)=0.25d0 ; pos(2,6)=0.25d0 ; pos(3,6)=0.0d0
      do i=7,int(nwyc/8)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=0.75d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(126)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.75d0 ; pos(3,2)=0.00d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.75d0 ; pos(3,3)=0.75d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.75d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.25d0
      do i=6,int(nwyc/6)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=0.25d0 ; pos(2,i)=0.75d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.75d0 ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(127)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/8)
```

```
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(128)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.50d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.50d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(129)
      pos(1,1)=0.75d0 ; pos(2,1)=0.25d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.75d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.00d0 ; pos(2,4)=0.5d0
      do i=5,int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=0.75d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/7)+1,nwyc
```



```
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(130)
      pos(1,1)=0.75d0 ; pos(2,1)=0.25d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.75d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.00d0
      do i=4,int(nwyc/4)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.75d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(131)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.00d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.50d0
      pos(1,5)=0.0d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.25d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.5d0 ; pos(3,6)=0.25d0
      do i=7,int(nwyc/12)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/12)+1,2*int(nwyc/12)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/12)+1,3*int(nwyc/12)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/12)+1,4*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/12)+1,5*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/12)+1,6*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/12)+1,7*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=7*int(nwyc/12)+1,8*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=8*int(nwyc/12)+1,9*int(nwyc/12)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=9*int(nwyc/12)+1,10*int(nwyc/12)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=10*int(nwyc/12)+1,11*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=11*int(nwyc/12)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(132)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.25d0
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```
      pos(1,5)=0.0d0 ; pos(2,5)=0.5d0 ; pos(3,5)=0.25d0
      pos(1,6)=0.0d0 ; pos(2,6)=0.5d0 ; pos(3,6)=0.00d0
      do i=7,int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/10)+1,2*int(nwyc/10)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/10)+1,3*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/10)+1,4*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/10)+1,5*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/10)+1,6*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=6*int(nwyc/10)+1,7*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.25d0
      enddo
      do i=7*int(nwyc/10)+1,8*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=8*int(nwyc/10)+1,9*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=9*int(nwyc/10)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(133)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0  ; pos(3,1)=0.00d0
      pos(1,2)=0.75d0 ; pos(2,2)=0.25d0  ; pos(3,2)=0.75d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0  ; pos(3,3)=0.25d0
      pos(1,4)=0.75d0 ; pos(2,4)=0.25d0  ; pos(3,4)=0.00d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0  ; pos(3,5)=0.00d0
      do i=6,int(nwyc/6)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=0.75d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(134)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.25d0
      pos(1,5)=0.75d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.25d0
      pos(1,6)=0.25d0 ; pos(2,6)=0.75d0 ; pos(3,6)=0.25d0
      do i=7,int(nwyc/8)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
```



```
      pos(1,i)=0.75d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.75d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(135)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(136)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.5d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```

```
      case(137)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.75d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.75d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.75d0
      do i=4,int(nwyc/5)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=0.75d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(138)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.75d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.75d0
      pos(1,3)=0.75d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.50d0
      do i=5,int(nwyc/6)
      pos(1,i)=0.25d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=0.75d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(139)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.50d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.50d0 ; pos(3,4)=0.25d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.25d0
      do i=6,int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/10)+1,2*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/10)+1,3*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/10)+1,4*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/10)+1,5*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=5*int(nwyc/10)+1,6*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5 ; pos(3,i)=0.25d0
      enddo
      do i=6*int(nwyc/10)+1,7*int(nwyc/10)
```



```
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=7*int(nwyc/10)+1,8*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=8*int(nwyc/10)+1,9*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=9*int(nwyc/10)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(140)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.25d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.00d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.50d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.50d0 ; pos(3,4)=0.00d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.25d0
      do i=6,int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(141)
      pos(1,1)=0.0d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.000d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.00d0 ; pos(3,2)=0.500d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.25d0 ; pos(3,3)=3.0d0/8.0d0
      pos(1,4)=0.0d0 ; pos(2,4)=0.75d0 ; pos(3,4)=0.125d0
      do i=5,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.25d0 ; pos(3,i)=7.0d0/8.0d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(142)
      pos(1,1)=0.0d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.000d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.125d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.25d0 ; pos(3,3)=3.0d0/8.0d0
      do i=4,int(nwyc/4)
```

```
      pos(1,i)=0.0d0 ; pos(2,i)=0.25d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i)+0.25d0 ; pos(3,i)=1.0d0/8.0d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(143)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=2.0d0/3.0d0 ; pos(2,i)=1.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(144)
      do i=1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(145)
      do i=1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(146)
      do i=1,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(147)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(148)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
```



```
      enddo

      case(149)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.5d0
      pos(1,5)=2.0d0/3.0d0 ; pos(2,5)=1.0d0/3.0d0 ; pos(3,5)=0.0d0
      pos(1,6)=2.0d0/3.0d0 ; pos(2,6)=1.0d0/3.0d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=2.0d0/3.0d0 ; pos(2,i)=1.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(150)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(151)
      do i=1,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=1.0d0/3.0d0
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=5.0d0/6.0d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(152)
      do i=1,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=1.0d0/3.0d0
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=5.0d0/6.0d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```

```
      case(153)
      do i=1,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=2.0d0/3.0d0
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=1.0d0/6.0d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(154)
      do i=1,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=1.0d0/6.0d0
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=2.0d0/3.0d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(155)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(156)
      do i=1,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=2.0d0/3.0d0 ; pos(2,i)=1.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(157)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```



```
      case(158)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=2.0d0/3.0d0 ; pos(2,i)=1.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(159)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(160)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(161)
      do i=1,int(nwyc/2)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(162)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```

```
      case(163)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.25d0
      pos(1,4)=2.0d0/3.0d0 ; pos(2,4)=1.0d0/3.0d0 ; pos(3,4)=0.25d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.0d0
      do i=6,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(164)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(165)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.00d0
      do i=4,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(166)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
```



```
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(167)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.00d0
      do i=4,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(168)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(169)
      do i=1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(170)
      do i=1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(171)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(172)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=0.5d0 ; pos(2,i)=0.5d0 ; pos(3,i)=ranmar()
      enddo
```

```
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(173)
      do i=1,int(nwyc/3)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(174)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.5d0
      pos(1,5)=2.0d0/3.0d0 ; pos(2,5)=1.0d0/3.0d0 ; pos(3,5)=0.0d0
      pos(1,6)=2.0d0/3.0d0 ; pos(2,6)=1.0d0/3.0d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=2.0d0/3.0d0 ; pos(2,i)=1.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(175)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(176)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
```



```
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.25d0
      pos(1,4)=2.0d0/3.0d0 ; pos(2,4)=1.0d0/3.0d0 ; pos(3,4)=0.25d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.0d0
      do i=6,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(177)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(178)
      do i=1,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(179)
      do i=1,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*pos(1,i) ; pos(3,i)=0.75d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
```

```
      enddo

      case(180)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(181)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.5d0 ; pos(2,3)=0.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*(pos(1,i)) ; pos(3,i)=0.0d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*(pos(1,i)) ; pos(3,i)=0.5d0
      enddo
      do i=6*int(nwyc/7),nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(182)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.25d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.75d0
      do i=5,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
```



```
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*(pos(1,i)) ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(183)
      do i=1,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(184)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(185)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(186)
      do i=1,int(nwyc/4)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```

```
      case(187)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.5d0
      pos(1,5)=2.0d0/3.0d0 ; pos(2,5)=1.0d0/3.0d0 ; pos(3,5)=0.0d0
      pos(1,6)=2.0d0/3.0d0 ; pos(2,6)=1.0d0/3.0d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/9)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/9)+1,2*int(nwyc/9)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/9)+1,3*int(nwyc/9)
      pos(1,i)=2.0d0/3.0d0 ; pos(2,i)=1.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/9)+1,4*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/9)+1,5*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/9)+1,6*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/9)+1,7*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=7*int(nwyc/9)+1,8*int(nwyc/9)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=8*int(nwyc/9),nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(188)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.00d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.25d0
      pos(1,5)=2.0d0/3.0d0 ; pos(2,5)=1.0d0/3.0d0 ; pos(3,5)=0.00d0
      pos(1,6)=2.0d0/3.0d0 ; pos(2,6)=1.0d0/3.0d0 ; pos(3,6)=0.25d0
      do i=7,int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=2.0d0/3.0d0 ; pos(2,i)=1.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=-pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(189)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
```



```
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(190)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.25d0
      pos(1,4)=2.0d0/3.0d0 ; pos(2,4)=1.0d0/3.0d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(191)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.5d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.0d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.5d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.0d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.5d0
      do i=7,int(nwyc/12)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/12)+1,2*int(nwyc/12)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/12)+1,3*int(nwyc/12)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/12)+1,4*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/12)+1,5*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/12)+1,6*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*pos(1,i) ; pos(3,i)=0.0d0
      enddo
```

```
      do i=6*int(nwyc/12)+1,7*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=2.d0*pos(1,i) ; pos(3,i)=0.5d0
      enddo
      do i=7*int(nwyc/12)+1,8*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=8*int(nwyc/12)+1,9*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=2.d0*pos(1,i) ;  pos(3,i)=ranmar()
      enddo
      do i=9*int(nwyc/12)+1,10*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=10*int(nwyc/12)+1,11*int(nwyc/12)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0
      enddo
      do i=11*int(nwyc/12)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(192)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.25d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.00d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.25d0
      pos(1,6)=0.5d0 ; pos(2,6)=0.0d0 ; pos(3,6)=0.00d0
      do i=7,int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=0.5d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.0d0
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(193)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.25d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.00d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.0d0
      do i=6,int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*pos(1,i) ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
```



```
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(194)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      pos(1,3)=1.0d0/3.0d0 ; pos(2,3)=2.0d0/3.0d0 ; pos(3,3)=0.25d0
      pos(1,4)=1.0d0/3.0d0 ; pos(2,4)=2.0d0/3.0d0 ; pos(3,4)=0.75d0
      pos(1,5)=0.5d0 ; pos(2,5)=0.0d0 ; pos(3,5)=0.0d0
      do i=6,int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=0.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=1.0d0/3.0d0 ; pos(2,i)=2.0d0/3.0d0 ; pos(3,i)=ranmar()
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=2.d0*pos(1,i) ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=2.0d0*pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(195)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(196)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.50d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.75d0 ; pos(2,4)=0.75d0 ; pos(3,4)=0.75d0
      do i=5,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
```

```
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(197)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.0d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.5d0
      do i=3,1*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(198)
      do i=1,int(nwyc/2)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(199)
      do i=1,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(200)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
```



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      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(201)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.50d0 ; pos(2,3)=0.50d0 ; pos(3,3)=0.50d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.75d0 ; pos(3,4)=0.75d0
      do i=5,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.75d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(202)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.50d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.00d0 ; pos(3,i)=0.00d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(203)
      pos(1,1)=0.000d0 ; pos(2,1)=0.000d0 ; pos(3,1)=0.000d0
      pos(1,2)=0.500d0 ; pos(2,2)=0.500d0 ; pos(3,2)=0.500d0
      pos(1,3)=0.125d0 ; pos(2,3)=0.125d0 ; pos(3,3)=0.125d0
      pos(1,4)=0.625d0 ; pos(2,4)=0.625d0 ; pos(3,4)=0.625d0
      do i=5,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.125d0 ; pos(3,i)=0.125d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(204)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      do i=4,int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
```

```
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(205)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.5d0
      do i=3,int(nwyc/2)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=int(nwyc/2)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(206)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.25d0
      do i=3,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(207)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(208)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.75d0 ; pos(2,3)=0.75d0 ; pos(3,3)=0.75d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.50d0 ; pos(3,4)=0.50d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.00d0 ; pos(3,5)=0.50d0
      pos(1,6)=0.25d0 ; pos(2,6)=0.50d0 ; pos(3,6)=0.00d0
      do i=7,int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
```



```
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(2,i)=ranmar() ; pos(1,i)=0.25d0 ; pos(3,i)=-pos(2,i)+0.5d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(2,i)=ranmar() ; pos(1,i)=0.25d0 ; pos(3,i)=pos(2,i)+0.5d0
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(209)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.50d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(210)
      pos(1,1)=0.000d0 ; pos(2,1)=0.000d0 ; pos(3,1)=0.000d0
      pos(1,2)=0.500d0 ; pos(2,2)=0.500d0 ; pos(3,2)=0.500d0
      pos(1,3)=0.125d0 ; pos(2,3)=0.125d0 ; pos(3,3)=0.125d0
      pos(1,4)=0.625d0 ; pos(2,4)=0.625d0 ; pos(3,4)=0.625d0
      do i=5,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(2,i)=ranmar() ; pos(1,i)=0.125d0 ; pos(3,i)=-pos(2,i)+0.25d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(211)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.50d0 ; pos(3,4)=0.00d0
      do i=5,int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
```

```
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(2,i)=ranmar() ; pos(1,i)=0.25d0 ; pos(3,i)=-pos(2,i)+0.5d0
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(212)
      pos(1,1)=0.125d0 ; pos(2,1)=0.125d0 ; pos(3,1)=0.125d0
      pos(1,2)=0.625d0 ; pos(2,2)=0.625d0 ; pos(3,2)=0.625d0
      do i=3,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(2,i)=ranmar() ; pos(1,i)=0.125d0 ; pos(3,i)=-pos(2,i)+0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(213)
      pos(1,1)=0.375d0 ; pos(2,1)=0.375d0 ; pos(3,1)=0.375d0
      pos(1,2)=0.875d0 ; pos(2,2)=0.875d0 ; pos(3,2)=0.875d0
      do i=3,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(2,i)=ranmar() ; pos(1,i)=0.125d0 ; pos(3,i)=pos(2,i)+0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(214)
      pos(1,1)=0.125d0 ; pos(2,1)=0.125d0 ; pos(3,1)=0.125d0
      pos(1,2)=0.875d0 ; pos(2,2)=0.875d0 ; pos(3,2)=0.875d0
      pos(1,3)=0.125d0 ; pos(2,3)=0.000d0 ; pos(3,3)=0.250d0
      pos(1,4)=0.625d0 ; pos(2,4)=0.000d0 ; pos(3,4)=0.250d0
      do i=5,int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(2,i)=ranmar() ; pos(1,i)=0.125d0 ; pos(3,i)=-pos(2,i)+0.25d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(2,i)=ranmar() ; pos(1,i)=0.125d0 ; pos(3,i)=pos(2,i)+0.25d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(215)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/6)
```



```
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(216)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.50d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.75d0 ; pos(2,4)=0.75d0 ; pos(3,4)=0.75d0
      do i=5,int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5),nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(217)
      pos(1,1)=0.00d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      do i=4,int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(218)
      pos(1,1)=0.00d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.0d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.5d0
      do i=5,int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
```

```
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(219)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.00d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.00d0
      do i=5,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(220)
      pos(1,1)=0.375d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.25d0
      pos(1,2)=0.875d0 ; pos(2,2)=0.0d0 ; pos(3,2)=0.25d0
      do i=3,int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/3)+1,2*int(nwyc/3)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/3)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(221)
      pos(1,1)=0.0d0 ; pos(2,1)=0.0d0 ; pos(3,1)=0.0d0
      pos(1,2)=0.5d0 ; pos(2,2)=0.5d0 ; pos(3,2)=0.5d0
      pos(1,3)=0.0d0 ; pos(2,3)=0.5d0 ; pos(3,3)=0.5d0
      pos(1,4)=0.5d0 ; pos(2,4)=0.0d0 ; pos(3,4)=0.0d0
      do i=5,int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/10)+1,2*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.5d0
      enddo
      do i=2*int(nwyc/10)+1,3*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=3*int(nwyc/10)+1,4*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=4*int(nwyc/10)+1,5*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=5*int(nwyc/10)+1,6*int(nwyc/10)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=6*int(nwyc/10)+1,7*int(nwyc/10)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/10)+1,8*int(nwyc/10)
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      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=8*int(nwyc/10)+1,9*int(nwyc/10)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=9*int(nwyc/10)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(222)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.75d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.75d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.75d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(223)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.50d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.50d0 ; pos(3,4)=0.00d0
      pos(1,5)=0.25d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.25d0
      do i=6,int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.5d0
      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.5d0 ; pos(3,i)=0.0d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(2,i)=ranmar() ; pos(1,i)=0.25d0 ; pos(3,i)=pos(2,i)+0.5d0
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(224)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.50d0 ; pos(2,3)=0.50d0 ; pos(3,3)=0.50d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.75d0 ; pos(3,4)=0.75d0
      pos(1,5)=0.50d0 ; pos(2,5)=0.25d0 ; pos(3,5)=0.75d0
      do i=6,int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/7)+1,2*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
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      enddo
      do i=2*int(nwyc/7)+1,3*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.75d0
      enddo
      do i=3*int(nwyc/7)+1,4*int(nwyc/7)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=-pos(2,i)
      enddo
      do i=4*int(nwyc/7)+1,5*int(nwyc/7)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=0.5d0+pos(2,i)
      enddo
      do i=5*int(nwyc/7)+1,6*int(nwyc/7)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/7)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(225)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.50d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(1,i)=0.5d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/8),nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(226)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.25d0 ; pos(2,2)=0.25d0 ; pos(3,2)=0.25d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.00d0 ; pos(3,3)=0.00d0
      pos(1,4)=0.00d0 ; pos(2,4)=0.25d0 ; pos(3,4)=0.25d0
      do i=5,int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/6)+1,2*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=0.25d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/6)+1,3*int(nwyc/6)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=3*int(nwyc/6)+1,4*int(nwyc/6)
      pos(1,i)=0.25d0 ; pos(2,i)=ranmar() ; pos(3,i)=pos(2,i)
      enddo
      do i=4*int(nwyc/6)+1,5*int(nwyc/6)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=5*int(nwyc/6)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
```



```
      enddo

      case(227)
      pos(1,1)=0.000d0 ; pos(2,1)=0.000d0 ; pos(3,1)=0.000d0
      pos(1,2)=0.500d0 ; pos(2,2)=0.500d0 ; pos(3,2)=0.500d0
      pos(1,3)=0.125d0 ; pos(2,3)=0.125d0 ; pos(3,3)=0.125d0
      pos(1,4)=0.375d0 ; pos(2,4)=0.375d0 ; pos(3,4)=0.375d0
      do i=5,int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/5)+1,2*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=0.125d0 ; pos(3,i)=0.125d0
      enddo
      do i=2*int(nwyc/5)+1,3*int(nwyc/5)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=3*int(nwyc/5)+1,4*int(nwyc/5)
      pos(1,i)=0.0d0  ; pos(2,i)=ranmar() ; pos(3,i)=-pos(2,i)
      enddo
      do i=4*int(nwyc/5)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(228)
      pos(1,1)=0.000d0 ; pos(2,1)=0.000d0 ; pos(3,1)=0.000d0
      pos(1,2)=0.125d0 ; pos(2,2)=0.125d0 ; pos(3,2)=0.125d0
      pos(1,3)=0.875d0 ; pos(2,3)=0.125d0 ; pos(3,3)=0.125d0
      pos(1,4)=0.250d0 ; pos(2,4)=0.250d0 ; pos(3,4)=0.250d0
      do i=5,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.125d0 ; pos(3,i)=0.125d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(2,i)=ranmar() ; pos(1,i)=0.25d0 ; pos(3,i)=-pos(2,i)
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo

      case(229)
      pos(1,1)=0.00d0 ; pos(2,1)=0.00d0 ; pos(3,1)=0.00d0
      pos(1,2)=0.00d0 ; pos(2,2)=0.50d0 ; pos(3,2)=0.50d0
      pos(1,3)=0.25d0 ; pos(2,3)=0.25d0 ; pos(3,3)=0.25d0
      pos(1,4)=0.25d0 ; pos(2,4)=0.00d0 ; pos(3,4)=0.50d0
      do i=5,int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.0d0
      enddo
      do i=1*int(nwyc/8)+1,2*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=2*int(nwyc/8)+1,3*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.50d0
      enddo
      do i=3*int(nwyc/8)+1,4*int(nwyc/8)
      pos(2,i)=ranmar() ; pos(1,i)=0.0d0 ; pos(3,i)=pos(2,i)
      enddo
      do i=4*int(nwyc/8)+1,5*int(nwyc/8)
      pos(2,i)=ranmar() ; pos(1,i)=0.25d0 ; pos(3,i)=-pos(2,i)+0.5d0
      enddo
      do i=5*int(nwyc/8)+1,6*int(nwyc/8)
      pos(1,i)=0.0d0 ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
      do i=6*int(nwyc/8)+1,7*int(nwyc/8)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=ranmar()
      enddo
      do i=7*int(nwyc/8)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
```

```
      enddo

      case(230)
      pos(1,1)=0.000d0 ; pos(2,1)=0.000d0 ; pos(3,1)=0.000d0
      pos(1,2)=0.125d0 ; pos(2,2)=0.125d0 ; pos(3,2)=0.125d0
      pos(1,3)=0.125d0 ; pos(2,3)=0.000d0 ; pos(3,3)=0.250d0
      pos(1,4)=0.375d0 ; pos(2,4)=0.000d0 ; pos(3,4)=0.250d0
      do i=5,int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=pos(1,i) ; pos(3,i)=pos(1,i)
      enddo
      do i=1*int(nwyc/4)+1,2*int(nwyc/4)
      pos(1,i)=ranmar() ; pos(2,i)=0.0d0 ; pos(3,i)=0.25d0
      enddo
      do i=2*int(nwyc/4)+1,3*int(nwyc/4)
      pos(2,i)=ranmar() ; pos(1,i)=0.125d0 ; pos(3,i)=-pos(2,i)+0.25d0
      enddo
      do i=3*int(nwyc/4)+1,nwyc
      pos(1,i)=ranmar() ; pos(2,i)=ranmar() ; pos(3,i)=ranmar()
      enddo
       end select
      do i=1,nwyc
      do j=1,3
      pos(j,i)=pos(j,i)-floor(pos(j,i))
      enddo
      enddo
      allocate(posdum(3,nwyc))
      posdum=pos
      allocate(wrk11(nwyc),iwrk11(nwyc))
      do i=1,nwyc
      wrk11(i)=ranmar()
      enddo
      call sortnr(nwyc,wrk11,iwrk11)
      do i=1,nwyc
      j=iwrk11(i) ; pos(:,i)=posdum(:,j)
      enddo
      deallocate(wrk11,iwrk11)
      deallocate(posdum)
      end
!234567890
```