

'From Smalltalk 5.5XM May 9 on 11 May 1979 at 8:11:56 pm.'

"Aurora"

```
Class new title: 'Aurora'  
  subclassof: Object  
  fields: 'source destination function figure ground  
  transparentground constantregister spareone sparetwo sparethree'  
  declare: 'DoverB auselloc DstoreB Setcolor CstoreB CoverB Conly  
  AtransoverB AtransstoreB auwriteloc Donly pmscreenrect AstoreB  
  Aonly Bonly aureadloc Noop AoverB ' ;  
  asFollows
```

This class has not yet been commented

INIT

```
classInit  
  ["specify i/o words"  
  auselloc _ 0177410.  
  auwriteloc _ 0177411.  
  aureadloc _ 0177412.  
  pmscreenrect _ (0 0) rect: (640 480).  
  mem auselloc _ 014000.  
  mem auwriteloc _ 010.  
  AstoreB _ 002117. "alto stream into pm"  
  CstoreB _ 000117. "stores figure color block into pm"  
  DstoreB _ 000517. "a/d output into pm"  
  AoverB _ 002103. "alto stream over pm"  
  CoverB _ 000103. "figure color block over pm"  
  DoverB _ 000503. "a/d output over pm"  
  AtransoverB _ 012103. "ground transparent"  
  AtransstoreB _ 012117. "ground transparent"  
  Noop _ 0.  
]
```

ACCESS TO PARTS

destination: destination

figure: figure

function: function

ground: ground

source: source

PRIMITIVE ACCESS

disabledatatransfer

```
[  
  mem auselloc _ 014000. "DDT"  
  mem auwriteloc _ 012.
```

```

]
doit "primitive call to Aurora"
[
  "self waitverticalinterval: 1 ;
  disabledatatransfer ;
  setsourcewin ;
  setrasterwin ;
  setfigureground ;
  setfunc ;
  enabledatatransfer ;
  waitverticalinterval: 1."

  user croak
] primitive: 105
enabledatatransfer
[

  mem auselloc      _ 014000.  "EDT"
  mem auwriteloc    _ 010.
  mem auselloc      _ 0.
]
setconst
["sets the constant register "
  mem auselloc _ 014000.  "WReg _ c"
  mem auwriteloc _ 0263.
  mem auwriteloc _ 0400 + constantregister.
]
setfigureground
["sets the figure and ground registers "
  mem auselloc _ 014000.  "set figure"
  mem auwriteloc _ 0263.
  mem auwriteloc _ 0400 + figure.

  mem auselloc _ 014000.  "set ground"
  mem auwriteloc _ 0267.
  mem auwriteloc _ 0400 + ground.
]
setfunc
[
  mem auselloc _ 014000.  "sets the inmode register "
  mem auwriteloc _ 0261.
  mem auwriteloc _ (function lshift: 0-8) + 0400.

  mem auselloc _ 014000.  "sets the op register"
  mem auwriteloc _ 0262.
  mem auwriteloc _ (function land: 0377) + 0400.
]
setpmcolortable: colordef
["sets the color table in the picture memory.
self waitverticalinterval: 1.
self disabledatatransfer.
mem auselloc _ 014000.

```

```

mem auwriteloc _ 0271.
mem auwriteloc _ 0400 + colordef value.
mem auwriteloc _ 0400 + colordef red.
mem auwriteloc _ 0400 + colordef green.
mem auwriteloc _ 0400 + colordef blue.

self enabledatatransfer."

user croak
] primitive: 106
setrasterwin | r
["sets the destination window"
r _ destination intersect: pmscreenrect.
r empty []
mem auselloc _ 010000.
mem auwriteloc _ r leftside +110.

mem auselloc _ 010002.
mem auwriteloc _ (r top)/2 + 21.

mem auselloc _ 010001.
mem auwriteloc _ r width.

mem auselloc _ 010003.
mem auwriteloc _ (r height)/2 - 1.

]
setsourcewin"set alto source window for aurora"
[
mem auselloc _ 020000.
mem auwriteloc _ mem 066. "starting memory address of bit map BCA
goes here"

mem auselloc _ 020001.
mem auwriteloc _ (user screenrect width +15 )/16. " bit maps width in
words BMR".

mem auselloc _ 020002.
mem auwriteloc _ (source width +15) /16. " source width in words"

mem auselloc _ 020003.
mem auwriteloc _ source height.

mem auselloc _ 020010.
mem auwriteloc _ 0261." format ... wrap in both x and y and one bit per
point."

]
waitverticalinterval: n | i"wait for n vertical intervals"
["for i to: n do
[
until ((mem aureadloc) land: 1) = 1 do []

```

```

    ]"
  ]

UTILITIES
black | r c i
[
  self standardcolortable.
  r _ user screenrect.
  user displayoffwhile [
    self source: r ;
    destination: r;
    figure: 1;
    ground: 0;
    function: CstoreB;
    doit. self function: Noop ; doit.]
  ]
set: vec | c
[
  c _ Colordef new.
  c value: (vec 1) ; red: (vec 2) ; green: (vec 3) ; blue: (vec 4).
  self setpmcolortable: c.
]
standardcolortable | c i
[
  c _ Colordef new.
  self set: (0 255 255 255).
  self set: (1 0 0 0).
  self set: (2 255 0 0).
  self set: (3 192 0 64).
  self set: (4 128 0 128).
  self set: (5 64 0 192).
  self set: (6 0 0 255).
  self set: (7 0 64 192).
  self set: (8 0 128 128).
  self set: (9 0 192 64).
  self set: (10 0 255 0).
  self set: (11 64 192 0).
  self set: (12 128 128 0).
  self set: (13 192 64 0).

  for i from: (14 to: 255) do
  [c value: i ; red: i ; green: i ; blue: i.
  self setpmcolortable: c.]
]
test | r c i
[
  r _ Rectangle new fromuser.
  user displayoffwhile [
    self source: r ;
    destination: r;
    figure: 1;
    ground: 0;

```

```
        function: AstoreB;
        doit. self function: Noop ; doit.]
    ]
white | r c i
[
self standardcolortable.
r _ user screenrect.
user displayoffwhile [
    self source: r ;
    destination: r;
    figure: 0;
    ground: 0;
    function: CstoreB;
    doit. self function: Noop ; doit.]
]
```

DEBUGGING

```
SystemOrganization classify: Aurora under: 'Aurora'.
Aurora classInit
```

"Colordef"

```
Class new title: 'Colordef'  
  subclassof: Object  
  fields: 'value red green blue'  
  declare: '';  
  asFollows
```

This class has not yet been commented

```
INIT  
value: value red: red green: green blue: blue |  
  [  
  ]
```

```
ACCESS  
blue  
  [ blue ]  
blue: blue  
green  
  [ green ]  
green: green  
red  
  [ red ]  
red: red  
value  
  [ value ]  
value: value
```

SystemOrganization classify: Colordef under: 'Aurora'.